FEEDSTUFFS

The Weekly Newspaper for the Feed Industry

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Fall Farrowings In Corn Belt 3% Under 1959

WASHINGTON — Fall farrowings in the 10 corn belt states will be 3% smaller than last year, according to the September pig crop report issued by the U.S. Department of Agriculture. The number of all hogs and pigs on farms on Sept. 1 has taken a 12% dip from the same time last year.

Fall farrowings include all pigs born from June through November of th's year. The number is now estimated at 4 270,000 for the 10 states (Ohio, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Missouri, South Dakota, Nebraska and Kansas.) Although this is about the same figure recorded for 1958, it is 14% larger than the 1949-58 average.

Farrowings are below a year ear-

(Turn to FARROWINGS, page 97)

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USDA Specialists Give Pig Report Favorable Comment

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — Top specialists at the U.S. Department of Agriculture in the feed grain and animal consuming interests comment most favorably on th's week's pig crop report, saying that the farmers in the corn-hog belt are now showing most remarkable common sense in their modest expansion of the December-February hog farrowings.

While these offic'a's did not volun-

(Turn to PIG REPORT, page 97)

NFIA Names President, Executive Secretary

BURLINGTON, WIS.—New president of National Feed Ingredients Assn. is Dean Stauffacher, Diamond V Mills, Inc., Cedar Rapids, Iowa. Mr. Stauffacher succeeds William E. Noble, Oelwein Chemical Co., Oelwein, Iowa, in the post.

I. Levin, Des Moines chemist and consultant and former Iowa feed control official, was named executive secretary of the group. He succeeds

(Turn to NFIA, page 6)

'No-Hay' Efficiency, Vitamin A Research Told by Minnesota

ROSEMOUNT, MINN.—University of Minnesota beef specialists reported these highly significant research results at the university's Beef Cattle-Grassland field day here Sept. 22:

● Beef cattle can be fattened efficiently with either no hay or a small amount, when fed with a restricted amount of corn and a full feed of corn silage.

● Feedlot steers may show symptoms of vitamin A deficiency even

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Seminar Notes Gains in Sounder Sales Methods

By GEORGE L. GATES
Editor of Feedstuffs

CHICAGO—Considerable progress in achieving sounder sales methods was reported at the second annual marketing seminar sponsored by the Sales Executives Council of the American Feed Manufacturers Assn. Sept. 21-22.

The 205 top feed and allied industry marketing and sales executives who attended the seminar at the Morrison Hotel heard encouraging reports from the council's chairman, Robert E. Miller, director of marketing, the Beacon Milling Co., and W. E. Glennon, president of AFMA, on two major programs of the council.

The National Feed Merchandising Plan, intended to get the industry away from unsound, long-term booking arrangements with guarantees against price decline, is being followed by more feed manufacturing companies this year. The program was launched in 1959, and steady progress in selling the merits of the program has been made, Mr. Miller reported.

A uniform sales contract, developed by the council, is to be submitted to the AFMA directors for approval next week, Mr. Glennon said. The

(Turn to SEMINAR, page 100)

Production School Spells Out Long-Term Effects of FDA Rules

By ROGER BERGLUND
Feedstuffs Managing Editor

KANSAS CITY—The far-reaching effects of Food and Drug Administration regulations on all phases of feed industry operations—from premixing through distribution and use of the final mix — were spelled out this week at the 11th annual Feed Production School in Kansas City.

And the interest in just what the regulations mean to the individual mill or person involved in the medicated feed business was reflected in the large audiences on hand for production school discussions of the details of compliance with FDA regulations.

Both industry and government speakers reminded feed men that they are concerned with regulations whose provisions extend through all aspects of the business and all the way into a mixer or conveyor or dust collector—to say nothing of formulation and distribution functions.

The discussions of FDA regulations and compliance requirements were one of the highlights of a school which got into such basic feed plant operations as particle reduction, proportioning and mixing. The school,

(Turn to SCHOOL, page 100)

Strike Settled in Buffalo; Workers Return to Elevators

BUFFALO — Workers have returned to their jobs at grain elevators here following acceptance of strike-settling agreements.

Agreement was reached Sept. 22 when the members of Local 1286, Grain Elevator Employees (AFL-CIO) voted overwhelmingly to accept an agreement reached by their representatives and those of eight grain elevators at 12:30 a.m. that day. The ninth firm, Buffalo Terminal Grain Corp., which laid off its crew as a result of a rail strike, triggering the

(Turn to STRIKE, page 4)

FEEDSTUFFS *Features This Week*

FEED EFFICIENCY—Some of the factors involved in efficiency of feed utilization in cattle rations are discussed on **page 28.**

SHRINKAGE—Results of a survey of Georgia feed mills on shrinkage are reported and analyzed on **page 36.**

RELATED LINES—Related lines and activities mill operators are taking on to offset rising costs are listed. **Page 44.**

MOBILE MILL—A feed man without a stationary mill tells how he meets competition and builds his business on **page 56.**

HEIFER PROGRAM—An Idaho feed man has found a plan to feed and raise heifers for dairy customers to be profitable. **Page 64.**

HIGH-MOISTURE CORN—High-moisture corn is a satisfactory feedstuff for growing-finishing hogs, say college scientists. **Page 86.**

— REGULAR FEATURES —

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New California Mill To Open by Oct. 1

SAN LEANDRO, CAL. — Nulaid Farmers Assn. here has announced that its new feed mill at Turlock will be in operation by Oct. 1. The mill, begun last fall, will serve the feed patrons of this farmer cooperative in the poultry and livestock area of the northern San Joaquin Valley.

The mill has a capacity of 40 tons per hour and is attached to the cooperative's Turlock branch and warehouse. The new mill will rely on

(Turn to NEW MILL, page 97)

Panelists Predict Feed Industry Situation of 1970

By GEORGE L. GATES
Editor of Feedstuffs

CHICAGO—"Industry adjustments at an accelerated pace . . . sale of more complete feeds . . . smaller sized feed mills, on the average . . . smaller and more local marketing areas . . . failure of uneconomical and poorly managed operations."

These are a few observations of what will happen to the feed industry during the next nine years. The predictions were made by feed manufacturing representatives participating on a panel, "The Feed Business of 1970," during the second annual marketing seminar of the Sales Executives Council of the American Feed Manufacturers Assn., held in Chicago this week.

Following is a summary of the talks presented by the panel members, as they attempted to analyze what the feed industry will be in 1970:

Moderator's Introduction—"During the past 10 years, we have seen greater changes in our feed industry than in any similar period of time," said E. D. Griffin, vice president, Allied Mills, Inc. "Many of the changes have been revolutionary, and most of them have been the result of changes that are taking place in American agriculture."

Mr. Griffin, in introducing a panel to discuss the feed business during the next 10 years, explained that the period of the '50's saw the transition from a wartime economy of speeded up production to meet the demands to a peacetime adjustment period when the balance of supplies and needs was taking shape. The productive capacity of American agriculture has continued to be in excess of the actual annual expansion needs on a population basis.

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The regional circulation of this issue is concentrated in the southwestern states

Top of the Hopper

THE GATHERING THIS WEEK in Chicago of many of the industry's most important marketing and sales executives provided solid evidence of the reliance the feed industry must place on the men who sell the feed if the industry is to reach its full growth potential.

The still young Sales Executives Council of the American Feed Manufacturers Assn. appears destined to assert vital leadership in the area of developing programs designed to put industry sales efforts on a sane and sound footing. The effort it has put into the revised Feed Merchandising Plan is beginning to show real results, and the about-to-be-introduced uniform sales contract developed by the group could well lead the industry to a new era of better customer relationships and considerably less risky sales dealings.

These programs, and others sure to be introduced if the interest and enthusiasm displayed by participants in the council's second marketing seminar is any indication of promise, give the organization a very tangible measure of accomplishment. Another accomplishment, less tangible but perhaps just as important, is the opportunity the marketing seminars provide for these key industry men to become better acquainted.

Prior to the organization of these gatherings there were few opportunities for top sales personnel to become well acquainted with their opposite numbers in other companies. The resulting opening up of some lines of communication, and short-circuiting of some of the "faulty intelligence" on field sales situations which have led to some irresponsible sales tactics, could be a real "bonus" accomplishment for the industry.

♥ ♥

FEED COMPANIES MAY HAVE to send an accountant around to call on feeders along with salesmen to help explain the savings possible by feeding a skillfully manufactured complete feed rather than a farm-mixed product. This prospect was noted by Claude I. Carter, general manager of Alabama Flour Mills, Decatur, Ala., in discussing the problem of meeting competition from farm mixing at the AFMA marketing seminar. Mr. Carter showed fellow feed men some detailed and specific cost comparisons developed by his company in showing a poultryman the greater return available to him with his mill's feed program. Such arithmetic undoubtedly will be most important in retaining complete feed volume for many companies, and perhaps the accountants will be out traveling the back roads with the sales folks.

♥ ♥

ARTICLES ABOUT POULTRYMEN setting up egg marketing programs practically never indicate whether or not the operation was financially successful, Lloyd Mowrer of the University of Wisconsin poultry husbandry department claims. He says a marketing program that involves sales by the producer direct to stores or consumers should be analyzed on this basis: Can all eggs produced be marketed direct, and if not, what about the surplus? What is the producer's time worth to grade, candle, carton and deliver eggs? What is the cost per dozen for direct marketing? Is the producer's time more productive if spent on marketing or on production? Does the producer receive premiums for quality plus a fair return on labor?

"It would be well for all producers engaged in direct marketing to study these questions carefully because most producers selling direct sell too cheap," he says.

The dealer markup for moving eggs from producers to consumers ranges 13 to 23¢ doz., while thousands of producers marketing direct charge 2 to 5¢ doz. above the dealer price, according to Mr. Mowrer. "Certainly the producer is not getting paid for his work. On the contrary, he is underselling the market and jeopardizing the operations of organized marketing."

How's Business?

AN EVERY WEEK REVIEW OF FORMULA FEED BUSINESS VOLUME, INCLUDING PRICE, SUPPLY AND DEMAND TRENDS

Reports on the condition of the formula feed business pretty generally follow the same pattern through the nation—little if any change from the previous week, and hopes for increased sales as we approach the fall months. Prices on hogs, eggs and poultry are showing considerable strength, tending to hold feed sales at respectable levels. The hog-corn ratio, based on Chicago prices, was 13.8 this week, unchanged from the previous week, but 2.1 points above the comparable week last year. The index of wholesale feedstuffs prices slipped from 74.4 last week to 74.1 this week, but remained slightly above 73.9 for a year earlier. The feed grain index, reflecting a sharp drop in corn prices, was down 1.5 points to 62.9 this week. (Feed market in detail on pages 98-100.)

Northwest

The feed business has moved along at about the same level as last week. Prices on hogs and eggs have improved somewhat, but several manufacturers report that many farmers right now are low on cash, and that this is tending to depress sales. However, there is some feeling that within the next couple weeks the picture will improve considerably, especially if the corn crop matures before frost, and it looks now as though it will.

Hog and turkey feed remain the best sellers. Unusually ample moisture, allowing cattle to forage in fields and pastures, is contributing to depressed cattle feed sales.

Prices of millfeeds and soybean oil meal weakened somewhat, while alfalfa meal advanced $2.

Southwest

Demand for formula feed eased off a bit during the week, with mills looking for running time as the week ended. Most mills will run five days but remain on a current basis. Reports indicate mills are hoping cattle feed will replace running time that should slow up on feeds such as turkey grower.

Ingredient buyers reflected a cautious attitude toward replacement of ingredients, as there was reported weakness in some of the major items.

Cattle feed sales continue to improve with reports of fair sales for October-December position, and also reports of an improved run on cattle feed for nearby shipment. Some of the mills have been expecting new crop soy pressure to improve future cattle feed sales.

Hog feed sales continue good and turkey and broiler feed business continues to hold up well.

The Southwest area is still in need of moisture despite recent scattered rains. The dryness has been a stimulus to a good dairy feed business, and also to the nearby cattle feed sales.

Northeast

Eight grain elevators in Buffalo remained idle Sept. 21 as members of Local 1286, Grain Elevator Employees (AFL-CIO), stayed away from their jobs in spite of back-to-work injunctions issued Sept. 19 by John S. Marsh, state supreme court justice. Four flour mills resumed operations but they are expected to shut down again when they have run out of grain.

None of the 450 members of Local 1286 returned to work Sept. 20, as negotiations, in a surprise move, were resumed between the local and the grain elevator operators at the bargaining table.

Meanwhile, Buffalo's supplies of millfeeds remained almost negligible. Prices advanced $2-3 Sept. 20 in a flash of buying as eastern mixers, hearing of the continued stoppage, went west for their supplies. This brought the overall advance since the dispute began to $4-4.50.

Sales of formula feed in the latest week were about steady with the previous period. Demand for egg mashes is climbing, and movement of dairy concentrates to mix with on-the-farm grain is mounting. Turkey feeds were well taken, and broiler feeds held steady.

Demand for eggs in the western New York area was slow to moderate, and the market was unsettled. Broiler prices in the East held about steady. Ingredient prices during the week were generally steady.

Running time of formula feed manufacturers averaged 36 hours last week, unchanged from the preceding period.

Southeast

Formula feed business in the Southeast is reported as being practically unchanged. Broiler feed business remained good, and cattle and hog feeds are beginning to show signs of picking up. For the last four weeks chick placements on the farm remained practically unchanged from week to week. Broiler prices held steady last week in the Southeast at 15¢ to 15½¢ lb. f.o.b. the farms.

Recent hurricanes have caused considerable damage to the plants of producers of menhaden fish meal, both in the Gulf and along the Atlantic seaboard, causing supplies to be limited, with prices advancing $1-2 per ton. With more and more cottonseed oil mills in operation, more offerings of cottonseed meal are being made, but buyers are not inclined to pay the present asking prices of the mills for any large tonnages at this time, as many believe prices on proteins are due for a further decline.

There is still a fairly good demand for new crop corn, and supplies as yet are not exceeding demand, although prices have dropped to $1.10 to $1.22 bu., depending upon locations. Demand for citrus pulp continues good, but what inventories are on hand have already been committed and there are no offerings even at a $52 level f.o.b. Florida producing points.

Central States

The situation in the mixed feed trade in this area does not seem to have changed much from the preceding week. Generally speaking, plants are operating on a 40-hour week, but here and there one is putting in a little overtime, which is encouraging in that there has not been much of it all through the very late spring and summer months.

Demand seems to be largely for fairly nearby shipment, and as a result there is but little in the way of order backlogs.

Talk of early frosts has stirred up some free-wheeling guesses as to just how great the impact of temperatures

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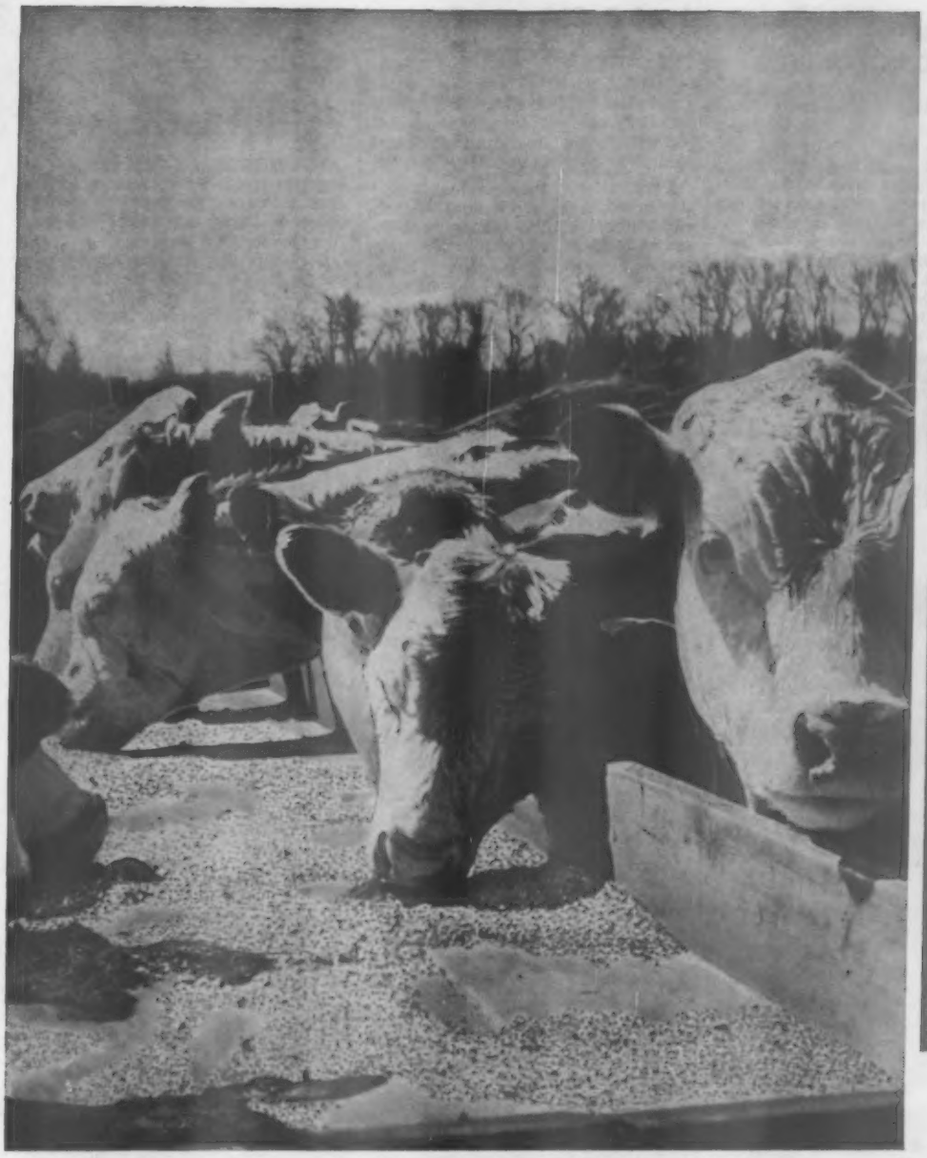

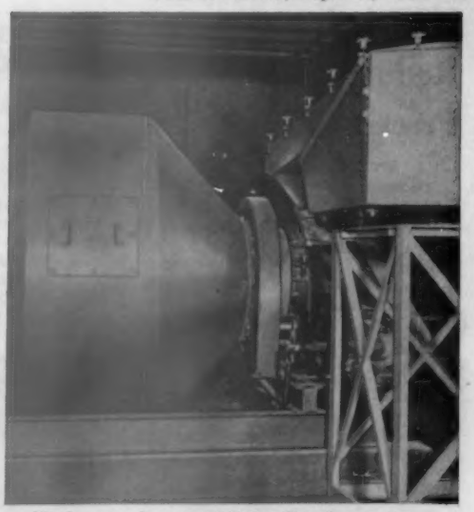

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USDA Announces Reduction in Sales Price on Soybeans

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — With U.S. Department of Agriculture stocks of soybeans from the old 1959 crop takeover down to about 9 million bushels —about half of which is held at farm levels and probably not collectible— USDA this week announced that starting the new crop year Oct. 1, 1960, it will reduce its sales price for beans by approximately 3½¢ per bushel through May 31, 1961.

In explaining this reduction, USDA officials said this price cut reflects the small quantity of old crop beans in government hands as the old 1959 crop year closes. They also said that this was an appropriate time to take this step, since the price announcement reflected about the current market price for beans.

The USDA statement in some respects is vague, but prodding of USDA officials produces some additional information.

For example, after June 1, 1961, USDA says that its sales price on such quantity of beans that they may have to take over under loan defaults will be a minimum of not less than 105% of the price support level prevailing at that time, plus the details of carrying charges as disclosed in the appended official USDA statement.

Only Minimum Price

This week, USDA officials reported that this statement means that this is only the minimum price, al-

(Turn to SOYBEANS, page 102)

Chicago Feed Club Holds Golf Outing

CHICAGO—A perfect autumn day for golf and more than 100 prizes drew a near-record turnout to the fall outing of the Chicago Feed Club, held at the River Forest Country Club here Sept. 13.

Winning the Grain & Feed Journal's Cup with a low gross of 74 was William A. Harris, St. Regis Paper Co. The low net for the day was shot by Joseph Conley, Bemis Bro. Bag Co—a 71.

Other golfing and door prizes went to: Don Sinclair, Sinclair Mineral & Chemical Co.; J. G. Russell, Chase Bag Co., and Charles Fawson, Calcium Carbonate Co., Rock Island Ill. Among the blind bogey winners were: H. R. Pender, Knappen Milling Co., Augusta, Mich; Edward J. DeLaet. St. Regis Paper Co., and A. H Fahrenkrog, Illinois Farm Supply Co. Bloomington, Ill.

Gerald A. Karstens, Feed Age. president of the Chicago Feed Club. appointed the following to serve on the nominating committee to select officer candidates for the year ahead. They are: Gladwin A. Read, Gladwin A Road Co., Evanston. Ill.; F. M Becker, Farm Bureau Milling Co., Hammond Ind., and Robert H. Griffiths, Allied Mills. Inc.

Arkansas Valley Names Nutritionist

DARDANELLE, ARK. — The appointment of Dr. Clifford Treat to the newly-created position of nutritionist for Arkansas Valley Industries. Inc., was announced this week by Harold Snyder, president.

Dr. Treat, a native of Big Flat, Ark., will have charge of all phases of nutrition for the poultry and feed firm. He will direct quality control of milling operations and the firm's poultry and livestock feeding divisions.

Arkansas Valley Industries recently announced plans for a large expansion.

LOSS OF RING JUST CHICKEN FEED

CLINTON, ARK. — The poultry processing plant here proved more than an outlet for Mrs. Charles Hurley's broilers. She recently lost her engagement ring while feeding broilers at the Hurley farm in the Barrens community of Van Buren county. The Hurleys searched carefully for the treasured ring, but it was not found. But the mystery of its quick disappearance was just as suddenly revealed at the Clinton plant. One of the Hurley broilers had swallowed the valuable ring.

Delmarva Broiler Price Eased Off Last Week, Settings Increase 1%

SALISBURY, MD. — The broiler price slipped about one-half cent last week in Delmarva. This was the first time since the first week in May that a lower price was received than for the same week a year earlier.

Last week's average price paid on the farm was 16.45¢ per pound compared to 16.97¢ a year ago. A week earlier the price was 17.05¢. This is the fourth time during this year that prices have been lower than those of comparable weeks a year earlier.

Hatcheries in the 22 important broiler producing states set 41,638,000 eggs during the week ending Sept. 17. This was up 1% from the week earlier but 20% above the corresponding week a year ago. Settings were up from the previous week in 10 of the 22 states. The states for which sizable increases were reported include Pennsylvania, North Carolina, and Alabama.

Chick placements in the 22 states totaled 28,442,000 broiler chicks. This was 2% below the previous week but 15% above the corresponding week a year ago. Decreases were reported for 15 states compared with the previous week. States showing appreciable decreases include Maine, Missouri and California.

Firm Names Manager For Research Farms

MANKATO, MINN.—W. G. "Gene" Huston has been named manager of the Hubbard Research Farms at Mankato, according to an announcement by Quentin J. Marsh, vice president and manager of the feed division of Hubbard Milling Co.

W. G. Huston

Mr. Huston, who has been with Hubbard in sales and service work for the past two years, is a native of Iowa. He was graduated from Iowa State University in 1954, with a B.S. degree in vocational agriculture.

Hubbard Milling Co. has greatly expanded its research facilities in the past year, acquiring 308 additional acres adjoining the original research station north of Mankato. Mr. Huston will coordinate livestock and poultry experimental and feeding projects on the research farms with George Patrias, director of research and nutrition.

Carey Salt Appoints Ag Products Manager

HUTCHINSON, KANSAS — Ray Tongate, Storm Lake, Iowa, has been appointed to the newly-created position of manager-agricultural products in the marketing division of the Carey Salt Co.

He was formerly sales engineer for the company in the Omaha area specializing in work with feed manufacturers, elevators and similar outlets for Carey Salt products.

1 of 3 Chicago Grain Locals Accepts Pact

CHICAGO — The largest of three grain elevator worker locals on strike here has reached agreement to end the walkout, according to the Federal Mediation and Conciliation Service.

Local 418, International Longshoremen's Assn. representatives voted to accept a 12½¢ hourly wage increase subject to membership approval.

However, the agreement did not mean the 14 grain elevators idled by the three-week-old dispute would be reopened immediately. A spokesman for the 11 companies involved said the local has decided to remain idle until Local 421, Weighmasters Union, an I.L.A. affiliate, reaches a settlement.

A third local, 519 of the United Packinghouse Workers, which represents elevator employees at the Cargill Grain Corp. elevator, also remained on strike. Both locals remaining on strike were expected to accept settlement patterned after the Local 418 agreement.

The settlement's 12½¢ wage boost is retroactive to Sept. 1, according to a federal mediation official. Present wage scales range from $2.48 to $3.75 per hour, according to union officials.

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STRIKE

(Continued from page 1)

strike, signed a contract with the union providing three days pay for workers during the shutdown.

The peace talks ending the two-week-old labor-management dispute were supervised by Clarence M. LaMotte, federal mediator.

Four flour mills, nearly closed down because they were running short of supplies, headed again toward full production. Several grain laden vessels, lying here for days, began moving to elevators for unloading.

The strike-settlement agreement, according to authoritative sources, provides:

(1) "Discussion period" not to exceed six months, during which the union and elevators will attempt to work out an interpretation of the controversial guaranteed-work clause.

(2) During this period, none of the eight elevators will invoke the clause.

(3) If no agreement on interpretation is reached during the six-month period, the matter will be submitted to arbitration.

(4) Lawsuits instituted by the elevator companies will be dropped. They sought $1,200,000 in damages and injunctive relief which might have led to contempt actions (Feedstuffs, Sept. 17).

The grain elevators involved were: Cargill; General Mills, Inc.; Norris Grain; American Elevator & Grain Division of F. H. Peavey & Co.; Continental Grain; the Pillsbury Co.; Standard Milling; International Milling Co., and Buffalo Terminal Grain Corp.

The chief issue was the interpretation of the contract provision which the union said guaranteed work to its members as long as there is grain in the elevators. The workers struck the elevators after Buffalo Terminal Grain Corp. laid off its 13-man crew as a result of the now-settled Pennsylvania Railroad strike.

Earlier in the dispute Supreme Court Justice John S. Marsh had issued a temporary injunction ordering the local to end its strike. The injunction termed the strike "an unlawful strike in violation of specific contract provisions." Workers stayed away from their jobs despite the order.

Egg Price Rise Spurs Egg-Type Chick Hatching

WASHINGTON — Production of egg-type chicks by commercial hatcheries in August continued to rise because of higher egg prices and further prospective increases.

The U.S. Department of Agriculture notes a 16,146,000 egg-type chick hatch for August, up 20% from the relatively light hatch of 13,401,000 of August, 1959.

Total chick production by commercial hatcheries was up 5% for the month at 172,155 000, as broiler-type chick output also increased from year-ago figures. Output of broiler-type chicks was up 4% from August, 1959.

Number of egg-type chicks hatched has been up from year earlier figures in each of the past four months, but the percentage above a year previous has decreased in each of the past three from 65% in June, to 35% for July and 20% for August.

The egg-type chick hatch is expected to remain above year earlier figures, as the number of egg-type eggs in incubators on Sept. 1 was 14% larger than on Sept. 1, 1959. Leading the way in the increase were the west north central states with a 96% increase in egg-type eggs in incubators and the middle Atlantic with 54%. Only the New England, east south central and Pacific states experienced a decline.

However, production of egg-type chicks for the first eight months of 1960 was still off. Total for the eight months was 415 941,000, compared with 485.081,000 during this period in 1959, down 14%.

Broiler-type chick production totaled 156,009.000 compared with 149,932,000 in August last year, an increase of 4%. Hatch of broiler-type chicks also has been up for the past four months, but the percentage above a year ago has declined each month from 12% in May down to 4% for August.

Indications are that the broiler-type chick hatch also will continue above a year earlier with 12% more of this type eggs in incubators.

Output of broiler-type chicks January through August totaled 1.379,505.000, compared with 1.329.142,000 during these months in 1959—an increase of 4%.

• • •

Poult Hatch Well Above Year Ago

WASHINGTON — Hatch of poults of all breeds by commercial hatcheries during August was well over year earlier figures, the U.S. Department of Agriculture reports.

Total hatch in August was 2 810,000, 30% above the same month a year earlier. More turkey eggs in incubators in all breeds Sept. 1 than a year ago indicate that the hatch of turkey poults will be larger than in September, 1959.

Total all heavy breeds hatched in August was 1,686,000, 55% above the 1,090,000 figure of a year ago in August. It was the second month that total heavy breed hatch has been above a year earlier, after two months of declines from year-ago figures.

Heavy white breed poult production during August of 1,288,000 poults was 28% larger than in August, 1959. The hatch of other heavy breeds (mostly bronze) of 398 000 was more than four times as large as the seasonally light hatch of 86,090 in August, 1959.

For January through August, the hatch of heavy white breeds of 19,216.000 was up 14% from the same period in 1959. The hatch of 53,767,-

(Turn to POUIT HATCH, page 97)

Butler

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Laying Tests, Lighting Among Georgia Poultry Event Topics

By DEWEY McNIECE
Georgia Extension Service

ROCK EAGLE, GA.—Topics discussed at the fifth annual Georgia Poultry Institute held here recently covered a variety of topics including: Use of random sample egg laying tests, restricted feeding, poultry lighting, the outlook, poultry health and control of epidemic tremors.

Dr. Jack F. Hill, director of research, Babcock Poultry Farms, Inc., Ithaca, N.Y., discussed the use of random sample egg laying tests in evaluating market egg strains of chickens. Dr. Hill mentioned that random sample egg laying tests were an important source of information but felt that the first thing the poultryman should do is to check the results of the strain he has been using on his own farm in previous years and to observe the strains that successful poultrymen are using in his area. He cautioned the poultryman that management practices differed between farms so the poultryman should be very careful in using this in making decisions.

Dr. Hill stated that a poultryman "should spend at least one hour each month studying these tests. In doing this, he should be where he will not be disturbed and can actually give some deep thought to the reports while he is studying them."

Restricted Feeding

Dr. E. P. Singsen, chairman, poultry department, University of Connecticut, told the group there was no simple clear-cut answer as to whether or now growing pullets should be on a restricted feeding program. Some of the other factors that he mentioned that affected age at sexual maturity were genetics, season of hatch, disease, management and nutrition—whether a complete or deficient ration was used and range or confinement rearing practices followed.

Dr. Singsen mentioned that feed restriction could be accomplished by restricting the feed to a pre-determined amount and using a high fiber ration. He pointed out that in many instances using a high fiber ration might increase the cost of growing pullets. "Reducing the amount of time that birds can eat is not a good way to restrict feed," he said.

Dr. Singsen said, "Even though there was no clear cut answer to this matter, the odds are two to one that mortality will be slightly less in the laying house if a restricted feeding program was followed but there will probably be a slightly higher mortality during the growing period."

Dr. Singsen also discussed the proper use of disposal pits. He stated that it required 70 to 80 days to decompose a chicken at 55° and only 10 to 11 days when the temperature was 100° F. The pH of the disposal pit should be maintained around 7, he said. He stated that many poultrymen were disappointed with the disposal pits since the chickens did not decompose fast enough so that one pit would take care of their poultry flock. The only way one disposal pit can be made to work in all instances is to have some type heat provided. He did not feel that this was practical in this part of the country and suggested that two or three disposal pits be used.

Poultry Lighting

Dale F. King, poultry department, Auburn (Ala.) University, discussed new ideas in poultry lighting. Lights can be used during the growing period to delay sexual maturity. He indicated that this might possibly be as good a way as to restrict the feed. Mr. King gave the following recommendations to the poultrymen concerning a lighting system. With a windowless house, the birds should be given six hours of light at from day old to five months. Then the light should be increased 15 minutes per week. With an open house, the amount of light that baby chicks are

(Turn to GEORGIA, page 102)

USDA ACCEPTS TURKEYS FOR LUNCH PROGRAM

WASHINGTON — This week the U.S. Department of Agriculture accepted offers of turkeys for the school lunch price support program for this commodity to the amount of approximately 9 million pounds out of more than 12.8 million offered.

Prices ranged 35.21-37¢ pound.

—Additional offers in the turkey program will be accepted next week.

All sales made to USDA under this program must be made by plants subscribing to or participating in the poultry and poultry products inspection act and the USDA grading program.

Buying of Dried Eggs at New Low

WASHINGTON—Tenders and acceptances of dried eggs by the U.S. Department of Agriculture this week fell to a new low for this renewed program. Maintenance of this trend for another week may persuade USDA that the crisis in country prices for shell eggs is over.

The acceptances this week of 336,375 lb. dried eggs at the government price of $1.1425 lb. came from only five companies, indicating a narrowing market to USDA officials.

USDA, however, continues its offers to accept tenders for next week but, if this downtrend of offers continues, it must be expected that the program will be chopped off promptly since it will mean more worktime at USDA for a relatively small compensation support-wise to the egg farmers.

Value of the dried whole egg solids purchased this week is $384,000. These eggs will be delivered to states for distribution to needy persons and other eligible outlets.

This action brings total purchases to 9,306,375 lb. at a cost of $10,619,000 since resumption of the program June 22. Section 32 surplus removal funds finance the program.

Moorman Mfg. Co. Names 3 to Board

QUINCY, ILL.—Elected Sept. 19 in a special Moorman Mfg. Co. stockholders meeting as new members of the board of directors were Douglas A. Dulaney, Hugo C. Hendrian and Richard A. Liebig.

Mr. Dulaney and Mr. Liebig had been elected secretary and treasurer, respectively (Feedstuffs, Aug. 20, 27), but had not been elected to the board of directors until Sept. 19.

The stockholders also voted to increase the size of the MoorMan board of directors from seven to nine members. Following the death of Claude Holmes, the board consisted of E. H. Wilson, Mrs. C. A. Moorman, R. B. Hulsen, Paul Cory, Dr. W. P. Elmslie and John Franks.

Mr. Hendrian, a native of Decatur, Ill., has been a MoorMan employee 26 years. Starting as a maintenance mechanic, he has held positions as production foreman, assistant factory superintendent, factory superintendent and early this year became manager of manufacturing and transportation. He was also a member of the MoorMan advisory board for two terms.

NFIA

(Continued from page 1)

Peter W. Janss, Des Moines, who served as executive secretary and counsel. Mr. Janss continues in his position as counsel, according to NFIA officials.

Other officers are: Vice presidents, C. S. Langen, Moorman Mfg. Co., Quincy, Ill., and W. P. Mann, W. P. Mann Sales Co., Omaha; secretary, Paul Bonewitz, Bonewitz Laboratories, Inc., Burlington, Iowa; and treasurer, William A. Power, Puritan Laboratories, Inc., Des Moines.

Five members of the board of directors whose terms expired were re-elected as follows, with terms to expire in 1963: Horace Hedges, Columbian Hog & Cattle Powder Co., Kansas City, Mo.; Art Swarzentruber, Vigortone Products Co., Cedar Rapids, Iowa; Floyd D. Huling, Dr. Macdonald's Vitamized Feed Co., Ft. Dodge, Iowa; H. Leigh Woehling, International Salt Co., Clarks Summit, Pa., and Gladwin A. Read, Gladwin A. Read Co., Evanston, Ill.

Mr. Noble was appointed to fill the unexpired board term (1961) of Mr. Stauffacher, the new president.

Other members of the board of directors are: J. J. O'Connor, Walnut Grove Products Co., Atlantic, Iowa; George F. Morese, E. M. Peet Mfg. Co., Council Bluffs, Iowa; T. Walter Hardy, Jr., Hardy Salt Co., St. Louis; William L. Brickson, Specifide, Inc., Indianapolis; Ed G. Horst, Calcium Carbonate Co., Chicago; Benjamin G. Sanders, Rocky Mountain Phosphates, Butte, Mont.; E. H. Werning, Pioneer Laboratories, Inc., Des Moines; Claude Butcher, Butcher Mfg. Co., Elwood, Ind.; Paul Bonewitz, Bonewitz Laboratories, Burlington, Iowa, and Russ Bagnall, Arbie Mineral Feed Co., Marshalltown, Iowa.

In the golf tournament held in conjunction with the meeting, Don Vierling, Atomic Basic Chemical Corp., Pittsburg, scored the low gross and Mr. Noble, retiring president, had the low net.

Winners in the bridge tournament for women were Mrs. M. J. Conley, Oelwein, Iowa, and Mrs. Russ Bagnall, Marshalltown, Iowa.

• • •

Drouth in Missouri Forces Early Buying Of Feed, Roughage

By Special Correspondent

SPRINGFIELD, MO. — Severe drouth in this area of southwest Missouri has burned up pastures and feed crops and is forcing farmers to start buying feed and roughage months ahead of the normal schedule.

Cattle are being marketed much earlier than in the past and many herds are being liquidated. A recent random count showed at least 15 farm livestock auctions in the region in one week.

Large numbers of farmers are dry lot feeding their livestock.

The lack of moisture is graphically illustrated by figures from the U.S. Weather Bureau here. The total precipitation from Jan. 1 through Aug. 31 was below that of 1953—the driest of the dry years of the last decade.

In fact, the period was the driest in the 70 years of recorded weather history here. Total precipitation was placed at 19.45 in.—.40 of an inch less than fell in 1953 and 9.88 in. below the normal average of 29.33 in.

Officials reported that many farmers have been feeding hay or silage, including green-chopped corn and sarge. And this has been going on for 60 days in localized instances.

Many acres of early fall small grains seeded for pasture still lay in fields unsprouted. In some regions, the grain sprouted and then died.

An area banker has already reported making hay loans—something not normally expected before January or February.

Market officials said beef cattle are coming to market weeks ahead of schedule and from 100-150 lb. lighter than normally expected.

Although there has been sharper-than-usual culling of dairy herds, a Union Stockyards spokesman said there has not yet been any wholesale marketing of dairy cattle.

The early movement of hay has pushed prices from $5-$9 a ton above those of a year ago, a hay dealer reported. The dealer said good alfalfa may reach a price of $40 ton before the end of this year. Most of the hay will have to be shipped in from Kansas, Iowa and north Missouri.

Early corn crops will help ease the critical situation, but dealers expect heavy sales of grain and mixed feeds to begin within a few weeks.

'Inequity' in Drug Sale Requirements Cited at Feed Ingredients Event

By ROBERT M. HARRISON
Feedstuffs Staff

BURLINGTON, WIS.—Speaking to the record 200 persons attending the annual convention of the National Feed Ingredients Assn. held here Sept. 14-16, Dr. W. S. Thompson, Reynoldsburg, Ohio, an Ohio feed control official, cited as an inequity the sale of drugs that require new drug applications direct to the consumer for use in feed mixtures.

"Certainly," he commented, "this condition should be corrected since the consumer, in most cases, is not as qualified or equipped to mix thoroughly drugs in feed as feed manufacturers." He also remarked on the difficulty of obtaining information concerning the use of drugs in feeds from the district offices of the Food and Drug Administration in that they usually refer one to Washington. He further commented that FDA field inspectors do not adequately inform the feed mixer as to the results of their inspection so that he can correct any conditions found to be improper.

"If given the opportunity," he said, "all feed control officials would welcome the privilege of cooperating with the FDA in this type of investigation wherein it could be done with greater satisfaction to all. Lack of information furnished to mixers and consumers on drug content of feeds also constitutes a serious problem.

"Therefore, it seems we have several problems to solve before satisfactory compliance with law is to be met."

1. Correct labeling and intelligent use of feeds containing drugs.

2. Education of the consumer by the dealer, salesman, feed manufacturer and by the drug producer.

3. Cooperation of state and federal agencies.

Parasite Control

Dr. A. C. Todd, University of Wisconsin, Madison, observed that the animal population is controlled, creating the situation which can lead to effective control of parasites in animals. He indicated that the proper use of anthelmintics to mount massive attacks against worms is the best method of control, although destruction of the infected animals and vaccination of the host animals offer some possibilities.

Dr. George K. Davis, University of

(Turn to DRUG SALES, page 102)

July Consumption Of Feedstuffs Off

WASHINGTON — July consumption of commercial feedstuffs totaled 1.6 million tons, slightly below June but 121,000 tons below July of 1959, according to figures released by the U.S. Department of Agriculture.

That figure brought October-July domestic disappearance to 16.6 million tons, 353,000 tons below the same months last season. Exports, mainly oilseed meals, totaled almost 800,000 tons the first 10 months, nearly 300,000 tons more than last year. Imports of feedstuffs of 175,000 tons are about half of last season.

Disappearance of oilseed meals, October-July, totaled 9.6 million tons, a drop of 500,000 tons from last season. The decrease reflects heavier exports and a drop of nearly 400,000 tons in the output of soybean meal. Cottonseed meal production was up but the smaller imports in part offset the increase. Disappearance of linseed meal was down by 100,000 with losses of 15,000 tons each for copra and peanut meals.

Consumption of grain by-product feed continued above last year with output of wheat millfeeds 150,000 tons more. Nearly 80,000 tons more of gluten feed and meal were fed this year than last season. Output of other feeds is also up slightly. Production of alfalfa meal so far this season is ahead of last year but stocks are also higher resulting in slightly lower feeding rate. Production and imports of fish meal are both down with a drop of 80,000 tons in available supplies.

Memphis Oilseed Meal Futures Irregular

MEMPHIS, TENN.—Prices of oilseed meal futures were irregular on the Memphis Board of Trade the past week, compared with one week earlier.

Slow cash market business contributed to a downturn of soybean oil meal, while cottonseed oil meal gained as mill selling interest dried up. This resulted from reports of Hurricane Ethel coming into the southern growing area combined with heavy rains over a large part of the South's Cotton Belt and improved cash business early in the period.

The soybean oil meal futures board reflected weakness developing for immediate cash business in September. Little production was available in soybean oil meal, however.

Fair interest appeared in cottonseed oil meal at lower levels, but no futures contracts were traded.

Unrestricted soybean oil meal closed Sept. 20 25¢@$1 per ton lower than a week earlier. Eastern Trunk Line soybean oil was 50¢@$1.50 lower, and bulk solvents cottonseed oil meal was unchanged to $1.50 higher.

Trading volume for the period amounted to 2,000 tons of unrestricted soybean oil meal.

Marketings Reflect Poor Feed Situation

CHEYENNE, WYO. — "The seriousness of the feed situation is reflected by the size and time of marketings," says a report by the Wyoming Cooperative Weather and Crop Reporting Service.

An extended supplemental feeding period for livestock will be necessary this year because of very poor range conditions, it continued. A short hay crop also contributed to the tightest livestock-feed ratio since 1954, the report stated.

The condition of range feed was well below average at 67. The condition of cattle and calves and sheep and lambs also was below average. Further herd and flock reductions are anticipated because of the high feed costs, it was reported.

Dr. P. G. Arvan S. R. Clement

Marketing Unit Staff Named by Monsanto

ST. LOUIS—Appointment of three directors of sales tops a list of key personnel named to staff the marketing department of Monsanto Chemical Co.'s newly formed agricultural chemicals division.

G. C. Davis

In making the announcement, J. Paul Ekberg, director of marketing for the division, said that the new sales organization is designed to give the fastest and broadest possible customer service. "This," he said, "includes efficient nationwide distribution to guarantee ready availability of a broad line of farm products together with expert technical assistance when needed."

Sales directors are Dr. Peter G. Arvan, with responsibility for product planning; Sam R. Clement, who is responsible for major customer contacts and the target account program, and G. C. Davis, who directs field sales operations.

Three product sales managers and a manager of product distribution report are Stewart D. Daniels, manager of fertilizer products; Ben W. Martin, manager of feed additives and special nitrogen products; James W. Starrett, Jr., manager of pesticide products, and John C. Docter, manager of product distribution.

Seven district sales managers include Douglas Kelly, Jr., at El Dorado, with James A. Oates as assistant manager; Richard S. Johnson at Atlanta, with Alwin C. Sherman as assistant manager; William R. Bone at Cincinnati, and Gladin G. Scott at New Orleans, with Clayton L. Barber as the assistant manager.

Manager of the New York district is Charles A. Leonard, currently on leave of absence due to illness. John S. Sullivan is acting as manager. Charles L. Fetzner manages the San Francisco district, and George C. Kempson is in charge of the St. Louis district with William O. Butler and Robert L. Olcott as assistant managers located at St. Louis and Kansas City, respectively.

Products made and marketed by Monsanto's new division include fertilizers, special nitrogen products, insecticides, herbicides and animal feed additives. According to Mr. Ekberg, agriculture was Monsanto's second largest industry customer last year with gross sales of over $90 million.

Revise Charts Used With Moisture Testers

CHICAGO — A revision has been made in the soybean charts used with the various models of Steinlite Moisture Testers, Seedburo Equipment Co., has announced.

The firm says that the revised soybean charts were recently mailed to all owners of Model 500-RC and 400-G Steinlites. Seedburo asks that anyone who does not receive his revised chart write the Fred Stein Laboratories immediately.

Model S and D revised soybean charts will be sent only upon request to the Fred Stein Laboratories, Atchison, Kansas, attention calibration department, Seedburo says.

Minnesota Egg Group Plans Fund Raising

MINNEAPOLIS—The recently organized Minnesota Egg Council has announced plans for a fund raising drive. Don Street of Don Street & Associates, White Bear Lake, Minn., has been engaged to set up a campaign for funds to finance promotion and other council activities through contacts with various segments of the poultry industry, according to Fred Moore, chairman of the membership and finance committee.

Other members of that newly-appointed committee are: Erle Oothoudt, Ray Hasley, Dick Lindell, D. E. Mehlinger and Leo Baumgartner.

Mr. Street was also engaged by the council to handle public relations duties.

Mr. Moore's committee also made recommendations on membership dues for the council. They were: $5 for an independent producer, $10 for a company membership (home office) and $25 for a state association.

Dr. Elton Johnson, head of the poultry department at the University of Minnesota, suggested to the group at a recent council meeting that Minnesota should have a system of poultry specialists in the various areas of the state. Council members attending the session concurred and volunteered to assist Dr. Johnson with efforts to establish such a program.

Objectives proposed for the $100 million Minnesota egg industry include: Promoting production and marketing of the highest quality eggs, creating a favorable climate for the state's egg producers and related businesses, pointing out the importance of that income to the state, bringing about a closer relationship between the producer and marketing agency working with related governmental agencies and the press and promoting greater consumption of eggs by propagating information on the nutritional value of eggs.

Also proposed were: Supporting the Poultry & Egg National Board in its advertising and promotion programs, keeping informed on industry activities in the state and nation, analyzing industry activities, analyzing problems of the industry, making suggestions to industry or governmental bodies and carrying on promotion and education activities at fairs and trade shows.

Robert L. Vohs Joins Feed Specialties, Inc.

DES MOINES—Robert L. Vohs, Ames, Iowa, will become associated with Feed Specialties, Inc., Oct. 1, according to an announcement by F. H. Kelley, company president.

Robert L. Vohs

Mr. Vohs will be the nutritionist of the company, and will be active in management.

He received a B.S. degree from Iowa State University in 1949 and an M.S. in animal nutrition from the same institution in 1950.

Shortly after receiving his master's degree in animal nutrition in 1950, Mr. Vohs joined Ames Reliable Products Co., Ames, as a salesman. He was named manager of that firm in 1958 and continued as manager after the sale of Ames Reliable to Doughboy Industries this year.

Milling Resumed

GRAND FORKS, N.D.—The commercial feed mill at the State Mill & Elevator, damaged by fire July 12, is now back in operation, according to Kenneth Ford, manager of the feed division at the firm. An open house has been scheduled for the future.

Allied Mills Reelects Officers, 3 Directors

CHICAGO—All Allied Mills, Inc., officers and three directors were reelected at the firm's annual meeting held recently (Feedstuffs, Sept. 10, 24).

Elmer W. Lenz continues as chairman of the board and president. Other officers are: Fredrick H. Blough, vice president; Edwin D. Griffin, vice president; Jesse E. Hunter, vice president; Robert R. Carlson, treasurer; Lester M. Bolitho, secretary, and W. Kenneth Haven, assistant secretary and assistant treasurer.

Directors reelected for three-year terms were: Jay A. Bolton, Ray E. Clizbe and Arthur G. Heidrich, Jr. Holdovers on the board are: Mr. Lenz, Mr. Griffin, James D. Head, Leo T. Murphy, Audley E. Patton and J. LeRoy Welsh.

Hog Cholera Outbreak Reported in Delaware

DOVER, DEL. — Pennsylvania has banned the importation of live swine from Delaware for breeding and feeding because of an outbreak of hog cholera in Delaware's Sussex County.

The ban does not affect hogs going to Pennsylvania slaughter houses, according to Dr. W. R. Teeter, Delaware state veterinarian.

Dr. Teeter said the outbreak is not as bad as last year's and his men are making strenuous efforts to vaccinate enough swine to stop the epidemic.

Dr. Teeter met with the Delaware board of agriculture on the problem.

The epidemic is blamed by Dr. William L. Henning, Pennsylvania agriculture secretary, on widespread use of a live-virus vaccine in Delaware. Dr. Teeter favors a law, like Pennsylvania's, forbidding use of live-virus. He favors a modified-virus vaccine, several types of which are on the market.

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Hurricane-Caused Damage Estimates Being Increased

By Special Correspondent

In some southeastern U.S. areas hit by Hurricane Donna, damage estimates are still incomplete, but in other areas estimates have been revised upward.

Grapefruit losses in some areas of Florida have been estimated at 80% with orange losses as high as 50%, according to Robert W. Rutledge, Florida Citrus Mutual executive president. Mr. Rutledge's current damage estimates are upward revisions of those reported earlier (Feedstuffs Sept. 17). Earlier he had estimated damage at 35-40% on grapefruit and 6-10% on oranges.

It had previously been considered that there would be little hurricane damage effect on the supplies and prices of citrus meal and pulp.

With the damage revision, the effect is now in some doubt. However, Mr. Rutledge believes the state will produce a fair quantity of fruit which will bring about an equally fair quantity of pulp. He said indications are that the grapefruit crop will be 23-25 million boxes as compared with 31,500 000 and the orange crop will be about the same as last year's 91,500,000 boxes.

Hurricane Donna damage to eastern Carolina farm crops has been estimated at a minimum of $16.7 million. "The damage estimate is conservative and did not include damage to farm buildings and forests," according to John Piland, head of a Clemson College survey team. He said that unfavorable weather now could greatly increase the damage to crops.

Damage to soybeans was set at $1 200 000; peanuts, $2 000 000; milo, $30 000; corn, $12,740,000, and cotton, $731 000.

"Where damaged crops can still be harvested," Mr. Piland said, "the harvest is likely to be three times as expensive as normal. Mechanical pickers moving through corn fields will have to be run very slowly. Quality of the crop also will be reduced.

"The state college survey team found extensive damage to all types of farm buildings, but made no attempt to estimate these losses," he added.

Returning to the Florida scene, the hurricane hit that state's sugar cane area severely, but the extent of damage to the crop was not yet determined this week, according to the U.S. Department of Agriculture. Early trade comments predicted less raw sugar but more blackstrap would be produced as a result of the storm damage.

E. R. Luter Joins Abbott Laboratories

CHICAGO—Edward R. Luter has joined Abbott Laboratories export companies as vice president and treasurer.

He came to Abbott from Sears, Roebuck & Co., where he was manager of foreign finance and taxation.

Mr. Luter was graduated from Northwestern University in 1943 and obtained a doctor of laws degree from the university in 1950.

For three years he was a faculty member at the University of Illinois International Trade Seminar, and he has chaired three Chicago Tax Club annual seminars. During the past year he served as financial vice president of the Wheaton Community Assn.

CAPITALIZATION LISTED

SEVERANCE, COLO. — Severance Elevator Co. has filed articles of incorporation listing $240,000 authorized capitalization to own and operate a grain elevator. Incorporators are J. L. and Gladys Gress and H. M. Lair.

Shift to Medium, Small Size Eggs Noted as Large Prices Climb

ITHACA, N.Y.—A cut in purchases of eggs by housewives and a shift from large to the less expensive medium and pullet sizes were noted recently in New York as prices at retail stores climbed over 70¢ doz.

An article in G.L.F. Week, published by the Cooperative G.L.F. Exchange, Inc., points out that when large egg wholesale quotations went over 50¢, retail prices crossed the 70¢ barrier. It costs about 10-12¢ doz. to process loose, uncandled eggs into Grade A or better, cartoned eggs and deliver them to retail stores.

Wholesale quotations on the best large, uncandled whites had climbed to 51½¢ (some producers were paid as high as 52½¢ and 53½¢ at the farm). This brought prices to retailers up around 61½-65½¢. Retailers add 7-8¢ doz. to cover their costs and get a slight profit.

Retail prices in New York recently varied from 69-73¢ in most stores. The reduction in large egg buying has drooped wholesale quotations.

The margins between white and brown eggs are smaller both in processing and at retail.

There is a shift in buying from the high-priced large eggs to the smaller sizes and the spread between them has narrowed. The small chick hatch early this year has also produced a relative scarcity of the small sizes.

Former Official Dies

MEMPHIS, TENN.—Thomas Haynes Gregory, Sr., former executive vice president of the National Cottonseed Products Assn., Inc., died Sept. 17 at his home here.

Mr. Gregory, 83, suffered a stroke three years ago. He was born in Virginia and moved to Memphis from Pine Bluff, Ark., about 1925. He joined the NCPA about 1935 and remained with the organization until shortly before his illness.

Survivors include his wife, two sons and two brothers.

Oilseed Meals: Supply and Distribution, Average 1954-58 Annual 1955-59

Item	Average 1954-58	1955	1956	1957	1958	1959*
	(Year beginning October)					
	1,000 tons					
Supply						
Stocks, Oct. 1	255	214	267	332	148	190
Production	10,495	9,926	10,556	10,808	12,285	12,250
Imports	127	104	124	148	162	50
Total	10,877	10,244	10,947	11,288	12,595	12,490
Domestic use	10,113	9,238	10,084	10,825	11,834	11,400
Exports	534	739	531	315	571	800

*Preliminary estimates.

USDA Anticipates Very Little Change in Oilseed Meal Supplies During 1960-61

WASHINGTON—Little change is expected in oilseed meal supplies in 1960-61, according to the U.S. Department of Agriculture.

Despite an estimated 5% rise in the 1960 soybean crop from the previous year, the total supply is expected to be about the same as the past two feeding years because of a smaller carryover, permitting crushing at least at the 1959-60 level.

Cottonseed meal production in the 1960 61 feeding year is expected to be about the same as the 2.5 million tons estimated for 1959-60.

Linseed meal production should about equal the 375 000 tons estimated for this year. The 1960 flaxseed crop is 32% larger than last year but stocks are down sharply, and the supply is below a year ago.

Supplies of peanut and copra meal are expected to be about the same as in 1959-60.

The 1960 soybean crop was estimated in September at 566 million bushels, 5% above the 1959 crop. The Oct. 1 carryover of soybeans is expected to be only half the 62 million bushels held on Oct. 1, 1959. This would give a total supply of about 600 million bushels, nearly equal to the supply in each of the past two feeding years. This would permit crushing to continue at least at the 1959-60 level. Soybean meal production in 1959-60 is expected to total a little under 9.2 million tons, about 300,000 tons below 1958-59, but the second largest production on record.

During the first 10 months of the 1959-60 feeding year, 9,541,000 tons of oilseed meal were fed to livestock and poultry, 492,000 tons below the same period a year earlier. Production during this period was only 21,000 tons below the 10,491,000 tons produced during the same period a year earlier.

Imports of oilseed meal during October-July totaled 40 000 tons, only a quarter of the imports in these same months of 1958-59, while exports were 60% over a year earlier. Aug. 1 stocks totaled 371,000 tons, almost half again as larger as the 253 000 tons held on that date in 1959.

With smaller soybean meal production and heavier exports this year, less has been available for livestock feeding. During October-July, 1959 60, soybean meal production totaled 7,745 000 tons. 385 000 tons less than a year before. Exports during this period totaled 556,000 tons, 120 000 tons more than the same period in 1958-59. The quantity of soybean meal fed to livestock was down about 500 000 tons to a little under 7.1 million tons for the 10 months.

Production of cottonseed meal totaled 2,265 000 tons, 408 000 tons or 22% more than during the first 10 months of the feeding year, compared with the same period in 1958-59. However, there was only a small increase in the quantity fed to livestock. Imports dropped from 126 000 to 31 000 tons and exports and stocks increased substantially.

Supplies of the other three oilseeds—linseed, peanut and copra—were smaller during the first 10 months of this year than in the same period of 1958-59. Production of linseed and peanut meal was below that of a year earlier. While production of copra meal was up, imports were down substantially.

Feed Industry Must Study Credit Says Marketing Seminar Speaker

CHICAGO—"The feed industry has much ground yet to cover and many practices to improve in the use of credit . . . and credit is a vital factor in the feed business."

These are the words of Ogden P. Confer, president, Hubbard Milling Co., Mankato, Minn., who spoke this week at the second annual marketing seminar of the American Feed Manufacturers Assn., Inc., in Chicago.

"Just how important is credit to the industry?" asked Mr. Confer. "Recent studies indicate that 75% of a typical Midwest feed manufacturer's working capital is tied up in accounts receivable.

"As dealers and farmers become bigger—and more specialized—credit becames more vital than ever. That's why a company president must take a long, hard look at credit. The future of his company . . . in fact its very existence . . . may depend on the credit policy and how that policy is carried out."

The speaker referred to a Dun and Bradstreet report of 1958, which explained that of the 14 964 business failures in the nation during that year, 18 6% of them were due to credit situations.

"Think of this," he said. "It means that 2 783 businesses failed because of credit. Breaking it down further, that's about one business failure an hour due to credit for every working hour during a year of 300 days. How many of these failures were in the feed business?"

Mr. Confer says that normal routine credit application seldom gets as far as a company president's desk. Most of the applications going to the president can be classified as "rare birds," laughed Mr. Confer.

"Most of these 'rare birds' should be behind glass in a museum. The trouble is, they haven't become extinct yet, though every rule of common sense says they should be.

"I'd like to point out a few of these 'rare birds' in the credit field that should be exterminated and classed with the dodo."

One of the examples pointed out by Mr. Confer included a fictitious character named "John Lack A Day," who handles six different brands of feed in his store. Among other things, he is a poor manager, his assets are few, and a bad risk for credit.

"I hope you haven't brought in 'rare birds' like these too many times," said Mr. Confer. "But I'm certain that characters like Lack A Day do exist.

"Is it good selling to meet competition when we know the risk is great?" asked the speaker. "Maybe we should concentrate on selling quality products and service rather than credit. Every feed company executive will admit that credit has been a tool that has helped expand our industry . . . and we realize credit will play an even bigger part in the future.

"But only those companies that practice sound credit will be around to see the future."

Mr. Confer detailed the costs for

(Turn to CREDIT, page 102)

Grain Man to Retire

OMAHA—Earl Miller, with Updike Grain Corp. here for 50 years, will retire this month, it has been announced. Mr. Miller is vice president and general manager of the firm.

Mr. Miller began his career with Updike Grain Corp. as a bookkeeper in 1910 and was appointed vice president and director of the company in 1939. The firm became a subsidiary of the Colorado Milling & Elevator Co. in 1944.

He has served several times on the National Grain Trade Council and served three times as president of the Omaha Grain Exchange. He was one of the founders of the Nebraska Grain Improvement Assn.

Murray Petersen, manager, Omaha Flour Mills, has been appointed vice president and general manager to succeed Mr. Miller Sept. 30, the date of his retirement.

Mr. Petersen became associated with the Colorado Milling & Elevator Co. in 1954 and was appointed manager of the firm's Omaha Flour Mills in 1955. He will retain that post in addition to his new appointment.

4 GRAMS!

that's the amount of zinc bacitracin (Baciferm) per ton of feed that increases broiler profits $6 to $22 per 1000 birds.

That's all. 4 grams. And broiler profits can increase $6.55 per 1000 birds to $22.58 per 1000 birds. That's what Baciferm zinc bacitracin antibiotic supplements do for you.

The proof? We have just completed calculations on the results of *six* recent tests conducted in different parts of the country involving over 14,000 birds! The summary below highlights the pertinent facts and figures. See for yourself why Baciferm makes such good business sense (and dollars) in *your* broiler feeds. These results confirm the data from scores of tests run during the past several years.

	NUMBER OF BIRDS	EXTRA PROFIT PER THOUSAND BIRDS OVER CONTROL (4 GRAMS ZINC BACITRACIN PER TON)
CSC TEST #23	524	$15.34
COLLEGE TEST #58	964	$13.95
COLLEGE TEST #60	300	$ 9.50
FEED MANUFACTURER'S TEST #78	12,000	$ 6.55
COLLEGE TEST #82	600	$21.85
COLLEGE TEST #83	150	$22.58

BASIS: market price of broilers 16¢ per lb.; feed cost 4½¢ per lb.; zinc bacitracin 7¢ per gram.

Doesn't it look like Baciferm is the buy for you? Baciferm's the buy for more and more feed manufacturers for both low and high level use. It's the economical antibiotic supplement for poultry and swine feeds. It contains the selectively-active antibiotic *zinc* bacitracin made exclusively by CSC under Patent No. 2,809,892. Baciferm's selective action kills dangerous bacteria fast but lets beneficial bacteria go right on producing vitamins and other valuable growth factors. College tests show that Baciferm gives full value in stimulating growth and reducing mortality. And – *zinc* bacitracin has the antibiotic stability manufacturers require.

One other thing: for stress and disease Baciferm can be added to each ton of *your* feed at $2 to $4 less than the cost of the tetracyclines.

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CONFERENCE PANELISTS — Panelists who answered questions about livestock and poultry nutrition and production at the Sept. 13 Iowa Feed Conference at Iowa State University, Ames, include (from left): Dr. Virgil Hays, professor of animal husbandry and chairman of the conference committee; Dr. William Monlux, veterinary pathologist; Dr. Wise Burroughs, beef nutrition authority; Dr. Richard Forsythe, head of Iowa State's poultry husbandry department and panel moderator; Dr. Stanley Balloun, poultry scientist, and Dr. Robert Vohs, nutritionist for Doughboy Industries.

Limited Future Seen for 'Disease-Free' Swine; Stilbestrol Criticism Answered

By FRED TUNKS
Feedstuffs Staff

AMES, IOWA—A "definitely limited" future for "disease-free" swine was forecast and a criticism of stilbestrol was answered by Iowa State University scientists who caught a barrage of questions thrown at the Iowa Feed Conference here Sept. 13 (Feedstuffs, Sept. 17).

Dr. Wise Burroughs, one of six panelists and widely known for his discoveries related to livestock growth stimulation, was asked for comments on rumors which charge that the feeding of stilbestrol to cattle results in carcass downgrading.

Dr. Burroughs asserted that experiments show stilbestrol does not cause a difference in carcass grade when the stilbestrol-fed cattle are on feed the same number of days as those not treated. He referred to a four-year study at the University of Minnesota to substantiate his conclusion.

"Only when cattle which have not been treated with stilbestrol are fed for longer periods do they tend to grade higher," he said.

Dr. Burroughs explained that since most stilbestrol-fed cattle reach market weight sooner than those not fed the growth stimulant, it is possible that the non-treated animals will have reached a higher grade when they become as heavy as the marketed treated animals.

Dr. Burroughs assured the more than 200 persons who attended the one-day conference that stilbestrol had been "cleared completely" for cattle feeding.

"There are no tissue residues when

(Turn to SWINE, page 11)

• • •

More About Uterus Signals Would Speed Development of Controlled Reproduction

AMES, IOWA—Question: How does the uterus—the control center for the oestrous cycle—signal the rest of an animal's reproductive organs in various stages of the cycle?

Answer: We don't know. But, if we did, far greater advances could be made toward the development of successful and practical procedures for the control of livestock reproduction.

That question and that answer, both indicated in a talk by Dr. R. M. Melampy, animal husbandry department, Iowa State University, at the recent Iowa Feed Conference here, briefly state a goal of research con-

(Turn to REPRODUCTION, page 14)

Salesmen Told How To Organize Efforts In Egg Programs

AMES, IOWA—Five steps involved in organizing the efforts of feed salesmen and servicemen in a quality egg program were outlined here at the recent Iowa Feed Conference by a noted poultry marketing specialist.

Here's how salesmanship, supervision and service can be put to work, as told by Leonard Z. Eggleton, Iowa State University poultry husbandry professor:

"1. Know what volume of eggs are currently available in your territory. Remember, about 40,000 birds are needed to produce one car of eggs per week.

"2. Know where the eggs in your area are sold.

"3. Study the price structure of current market channels. Decide for yourself if you are willing to stake the future of your poultry feed sales on the current outlets for eggs in the area.

"4. If you are satisfied with current outlets, help promote orderly marketing in your territory. Become identified with the program or programs in which you believe.

"5. If you are not satisfied with present egg outlets, take positive steps to improve them . . . You will best serve your territory if you will offer the 'three big S's' salesmanship, supervision and service—to a local dealer already handling your feed. With him and your thorough knowledge of the area, any territory can produce large quantities of quality eggs."

Also for the consideration of salesmen in the feed conference audience, Mr. Eggleton listed "three cardinal points that make a stable program, make feed sales pay and produce Iowa

(Turn to SALESMEN, page 16)

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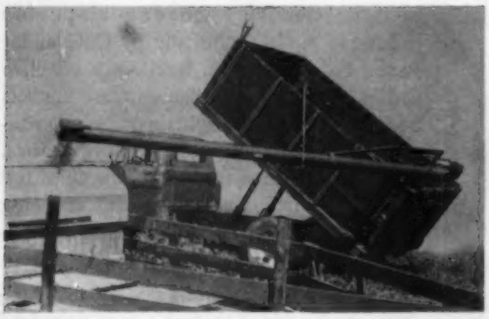

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Arch Gilchrist

C. E. McIlvain

Says Feed Salesman Is Pillar, Not Peddler

AMES, IOWA—"He's a pillar in the community—not just a peddler."

That's how C. E. McIlvain of Carroll, Iowa, territory sales manager for Nutrena Mills, Inc., described today's feed salesman. He told his audience at the Iowa Feed Conference: "The salesman is the most important man in the world today . . . He keeps our economy going."

Mr. McIlvain, a partner in oratory with another Nutrena sales executive, Arch Gilchrist of Sioux City, Iowa, painted a word portrait of "yesterday's salesman." Then Mr. Gilchrist took over and told how the modern salesman differs from his predecessor of years ago. They said the feed salesman has changed "because production and marketing have changed."

How to "Close"

Mr. Gilchrist offered the following "proven methods" of closing sales:

"1. Get your prospect interested in your proposition.

"2. Tell a fascinating sales story in terms of your customer's buying motives.

"3. Overcome any objections to your proposition. Answer them to the satisfaction of your customer.

"4. Ask for the order."

"Barnacles of Salesmanship"

In another talk with a message specifically designed for salesmen in the conference audience, Verne Martin, retired sales manager, Maytag Co., Newton, Iowa, illustrated, with examples, "barnacles" which should be removed from "salesmanSHIP."

His list included:

—Failure to participate in community affairs.

—Failure to capably manage private affairs.

—Failure to keep promises.

—Failure to be a good listener.

—Lack of tact.

—Lack of enthusiasm.

—Failure to say "thank you."

—Failure to put "U" before "I" in business transactions.

—Failure to give credit to associates.

—Failure to translate product into needs.

—Failure to use the user in verbal and written testimonials.

—Talking in generalities—not specifics.

—Unwilling to constructively criticize ourselves.

—Failure to develop prospects.

—Failure to make follow-up calls.

—Failure to make test close. Ask questions which can be answered "yes and yes."

—Failure to allocate time wisely among products and customers.

—Failure to advance employer's interest.

Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

Use Feedstuffs WANT ADS for RESULTS

SWINE

(Continued from page 10)

it is fed to cattle, and there are no health problems," he said. "This has been confirmed by the Food and Drug Administration."

The panelists were asked: "What are the problems and potential of disease-free swine?"

Dr. William Monlux, professor of veterinary pathology, replied that perhaps the term "specific pathogen-free" should be used "since I doubt whether any hog will ever be completely free of disease."

He said the practice of producing pathogen-free swine has "limited potential, particularly for individuals selling purebred stock."

The success of this new swine industry practice, he said, depends upon the surroundings in which the pigs are placed.

"I'm worried about what is to happen to some of these pigs," Dr. Monlux remarked. "They may lack resistance to disease."

Other questions and answers follow:

How valuable are enzymes in poultry and livestock production?

Dr. Burroughs said results from experiments with enzymes have been variable, and studies are being continued in an effort to obtain consistent results.

"We will use enzymes in the future when we know just what should be recommended," he said.

Dr. Stanley Balloun of Iowa State's poultry husbandry department said enzymes had produced no responses in poultry feeding tests at Iowa State, but added that enzymes were effective in the Pacific Northwest when fed with Pacific-grown barley.

So far, enzymes have limited application in hog production, panelists concluded.

Dr. Balloun concluded his remarks in these words: "Through enzymes, we may be able to get better utilization of protein sources."

How about wet corn for poultry feeding?

Dr. Balloun injected a bit of humor with this answer: "Poultry will do well on wet corn from the silo as well as on dry corn—but I'm not recommending that anyone build a silo to feed his chickens."

Why don't we raise more turkeys on a year-round basis?

Dr. Robert Vohs, Doughboy Industries, Ames, said making poults available the year around and making the consumer aware of the year-around availability of turkey will help create a situation in which the ups and downs of turkey production can be smoothed out.

How do soybean protein and animal protein compare? Will soybean protein replace animal protein?

Replies indicated that, generally

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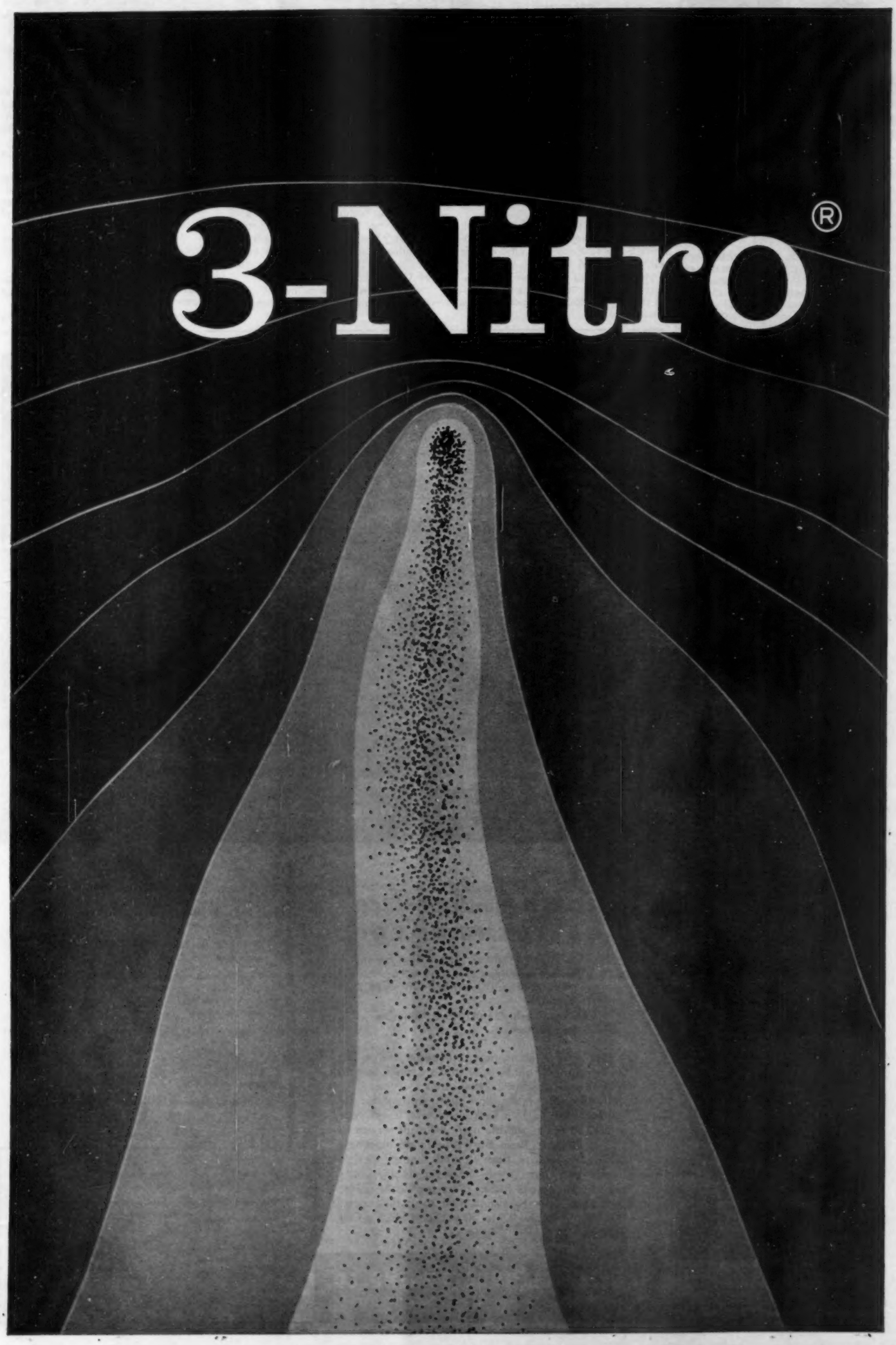
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speaking, animal and plant protein are nearly equal in nutrition value. However, panelists pointed out advantages which each has over the other.

"In most respects," said Dr. Balloun, "soybean protein is of higher quality for poultry, but soybean meal lacks phosphorus and meat scraps are higher in energy. They are much alike vitaminwise, but soybean meal has the edge proteinwise."

Dr. Balloun said Iowa State poultry nutritionists believe a poultry ration should contain meat meal to supply "what we call the fish factor." He recommended that the ration contain 2-5% meat and bone meal.

In ruminant nutrition, Dr. Burroughs said, "it doesn't matter which protein is fed . . . but animal proteins haven't been used as much as vegetable proteins in beef feeding." It was his opinion that plant proteins can be fed exclusively to ruminants.

(Answers to a question related to the possibility of vitamin A deficiencies in feedlots were reported in the Feedstuffs issue of Sept. 17.)

REPRODUCTION

(Continued from page 10)

ducted by Iowa State University and other agricultural institutions.

"Control of reproduction is of particular importance at this time because of the development of large scale production units," Dr. Melampy related. "The control of reproduction in cattle, swine and sheep would allow for more efficient use of farm and ranch facilities as well as meet market demands for livestock products."

More specifically, research projects are being aimed at methods of controlling the oestrous cycle of female farm animals to facilitate group breeding.

But practical control of the cycle would not be the end of the search, as indicated by this statement made by Dr. Melampy: "It is one thing to control oestrous and ovulation, but it is another to have good conception thereafter."

Related to Dr. Melampy's discussion was a follow-up talk by Dr. Vaughn Speer, also of Iowa State's animal husbandry department. Dr. Speer centered his remarks on the nutrition and management of the swine breeding herd.

Dr Speer reasoned that factors other than nutrition or breeding have a great influence on reproductive performance of swine. Here's what he had to say about those "other" managerial and environmental factors:

Temperature—"High temperatures for prolonged periods of time will reduce conception rate in sows as shown by a four-year summary of records on the swine nutrition herd at Iowa. Conception appears to be attributable both to the sow and to the boar based on an experiment from Purdue. Litter size is reduced, according to results from Oklahoma."

Disease—"An outbreak of disease at breeding time will result in small litters or dead pigs at farrowing time. This situation can occur not only with the reproductive diseases such as leptospirosis and brucellosis, but with diseases normally considered troublesome but not particularly harmful such as swine influenza. Vaccination against hog cholera during the gestation period will increase the number of pigs born dead if the vaccination causes a reaction and causes a fever in the sows."

Gilt Age, Heat Periods—"The age of gilts and the number of heat periods a gilt has had since puberty will make a difference in litter size. A gilt continues to shed an increasing number of eggs in each succeeding cycle during her first four or five heat periods. More pigs will be farrowed then by waiting to breed gilts after they have experienced several heat periods as compared to breeding during the first heat period."

Re-breeding — "Re-breeding sows too soon after farrowing will affect conception rate, and litter size can be reduced in those sows that do conceive. If the pigs are weaned at three weeks of age or less, it is recommended that the sows not be re-bred immediately (3 to 5 days) after weaning, but wait until the next heat period to increase the chances of larger litters."

Feed—"The level or amount of daily feed consumed or the condition (fatness) of the gilts or sows in the breeding herd will affect reproductive efficiency. Experiments have shown that limiting the amount of feed will increase the litter size, and at the same time reduce feed costs. Breeding and farrowing difficulties are more common in overly fat sows. The breeding herd is more apt to be overfed than underfed."

Dr. Speer concluded: "Though the feed or feeding program may be blamed for many problems encountered with the breeding herd, the feed salesman or feed dealer has a chance to do a real service by pointing out the environmental factors that reduce over-all performance and by suggesting better management procedures for improvement in reproductive efficiency."

Interrelationships

In a discussion of interrelationships of nutrition, management and disease in swine production, Dr. William S. Monlux, professor of veterinary pathology at Iowa State, remarked, "It is well to remember that in dealing with nutritional diseases of swine, it is very difficult for either the nutritionist or the veterinarian to place his finger on the exact cause of the

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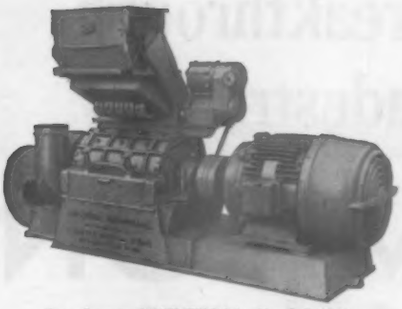

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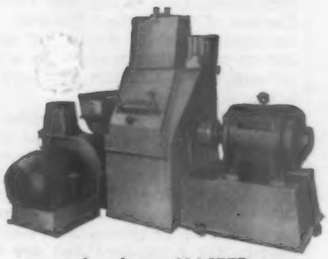

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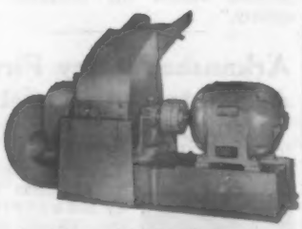

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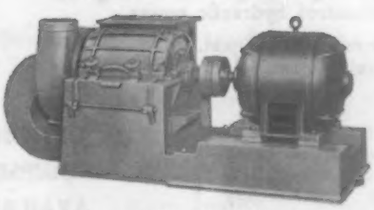

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metabolic disease that is present. In most instances the deficiency does not involve one ingredient of the ration alone, but instead is concerned with a number of the ingredients of the ration."

Dr. Monlux noted that many swine producers fail to recognize that rations are designed for average farm conditions and will not meet the requirements of all swine under all situations.

"When the average ration is fed to a group of hogs," he said, "factors such as management, environment, temperature, ration supplements, pasture, breed, type of hog and various diseases all exert their influence on the results obtained. Any one of these factors may be the reason why a nutritional disease appears in a herd of swine.

"All too often the farmer wishes to blame the feed company for the difficulty he is experiencing when symptoms of malnutrition appear. Yet very brief investigation of the situation reveals that his neighbor or perhaps several neighbors are feeding exactly the same feed and are not experiencing this difficulty at all."

Dr. Monlux discussed a number of swine diseases and deficiencies which illustrated how nutrition, management, environment and heredity are interrelated.

SALESMEN

(Continued from page 10)

eggs that we all may stand back of with pride." These points are:

"1. A stable quality egg program pays its own way.

"2. A stable program in quality egg production and marketing must return more to the producer than all the costs that have to be added to insure quality eggs.

"3. A stable program must have incentives for the larger producer as well as the smaller ones who produce quality. Everything must be pointed toward the incentive for quality."

Arkansas Valley Firm Appoints Nutritionist

DARDANELLE, ARK. — Dr. Clifford Treat has been named to the newly created position of nutritionist for Arkansas Valley Industries, Inc., Harold Snyder, AVI president, has announced.

Dr. Clifford Treat

Dr. Treat will be in charge of all phases of nutrition for AVI and its subsidiaries, Mr. Snyder said, directing quality control of AVI's milling operations and the feeding of the company's poultry and livestock. He will assume duties that have been handled by other members of the AVI staff, relieving those persons for other duties in the rapid expansion of AVI, he added.

Dr. Treat received a bachelor of science degree in poultry science at the University of Arkansas in 1955 and a master of science degree in animal nutrition from Arkansas in 1957. He received a doctor of philosophy degree in poultry nutrition from Texas Agricultural and Mechanical College in August, 1960. While at Arkansas, he received Sears and Short Memorial Foundation Scholarships.

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PSITTACOSIS-ORNITHOSIS

Parrots are associated . . .

The name psittacosis—from the Greek psittakos, meaning parrot—was suggested in 1895 by A. Morange to describe a severe, sometimes fatal, pneumonia-like disease of man which often developed after association with diseased birds of the psittacidae family—mainly parrots, parakeets and parrotlets (1). Today, the term is used to designate a specific disease of man and of psittacine birds caused by large-particle viruses derived from avian hosts. The term, ornithosis (condition of birds), was proposed in 1941 to describe a disease of non-psittacine birds and mammals caused by psittacosis-like viruses (2). Psittacosis, ornithosis and several other distinct disease entities are caused by antigenically related microorganisms which are referred to as the psittacosis-lymphogranuloma-venereum group of viruses (Table 1).

After many cases developed . . .

In animals. Psittacosis or ornithosis is worldwide in distribution and occurs wherever there is contact with animals which harbor psittacosis agents. At least 70 avian species have been proven to be spontaneously infected with the virus (3). Recently, for example, antibodies to the disease-causing agent have been detected in the serum of penguins in the Antarctic (4).

The over-all incidence in animals is entirely unknown since it is now recognized that many wild and domestic species can carry and excrete psittacosis viruses for years while showing no visible sign of disease. Psittacine birds and pigeons are the most common carriers of psittacosis agents.

Turkeys, chickens, ducks and pheasants are also sources of the virus. The disease in turkeys has attracted attention because of the extraordinary virulence of some of the viral agents isolated from these birds. Egrets and gulls have also been incriminated as carriers of highly-virulent ornithosis viruses.

It has been suggested that all members of the psittacosis - lymphogranuloma - venereum group of organisms originated from a common ancestral avian virus. In the process of evolution, certain viruses developed genetic characteristics which restricted their natural host range to a single species; for example, the viruses causing lymphogranuloma-venereum of man or pneumonitis of mice.

In man. The first probable cases of psittacosis in man were observed in 1874 (5) and in 1879 (6) and were described as an "atypical pneumonia" and "pneumo-typhus," respectively.

Recognized epidemics of psittacosis in man occurred in the 1890's in France, Germany and Italy,

Table 1

Diseases Caused by Members of the Psittacosis-Lymphogranuloma-Venereum Group of Viruses and Related Organisms

Class of Virus	Host	Disease Name	Disease Is Transmitted Naturally to:
Avian	Parrots, parakeets, cockatoos, macaws, etc.	Psittacosis	Man, Birds
	Turkeys, chickens, ducks pigeons (over 60 species)	Ornithosis	Man, Birds (Mammals ?)
Mammalian	Mice	Murine pneumonitis	Mice
	Cats	Feline pneumonitis	Cats
	Cats	Cat Scratch Fever (?)	Man (?)
	Opposum	Meningopneumonitis	?
	Sheep	Enzootic abortion of ewes	Sheep
	Sheep	Lamb pneumonia	Sheep
	Goats	Pneumonitis	Goats
	Cattle	Sporadic Bovine Encephalomyelitis	Cattle
	Cattle	Calf enteritis	Cattle
Human	Man	Psittacosis	Man
	Man	Lymphogranuloma venereum	Man
	Man	Trachoma	Man
	Man	Inclusion conjunctivitis	Man

and a pandemic in 1929-1930 resulted in over 750 human cases (143 deaths) with parrots being the prime infectious reservoir. The disease has continued to plague man. The average number of cases of psittacosis in the United States reported to the United States Public Health Service for 1954-1956 was 435 per year, but only one-third of the three-year total of cases was proven to have been derived from a psittacine source. It is apparent, therefore, that other sources account for a large share of human cases. Turkeys have been implicated as a major source of human infection in recent years (7). Epidemiologists have suggested that the number of human cases may be much higher than the reported cases since the disease in its milder form is difficult to distinguish, clinically, from other respiratory diseases such as influenza, atypical pneumonia or the common cold. Moreover, psittacosis virus has been isolated from the blood or sputum of persons showing no symptoms; therefore, infections may occur without an apparent disease process.

Economic loss. Economic losses due to psittacosis in man, or in pet birds—which number in the millions in the United States alone—cannot be calculated. The disease in commercial birds—turkeys, pigeons, ducks—has resulted in direct losses to growers due to the drop in egg production and market value of breeder birds. These losses for 1956 ran into thousands of dollars in one state alone and forced bird breeding establishments out of business.

Viruses are recently implicated . . .

The virus nature of the disease was not established until the 1930's when a number of investigators demonstrated the ability of the infectious agent to pass through bacteriological filters. During this period, three investigators—Lillie, Coles and Levinthol—simultaneously discovered minute spherical bodies in the reticulo-endothelial cells of infected birds and man; hence the term, L.C.L. bodies, which has been used to designate elementary bodies of psittacosis viruses. Shortly afterwards, other workers proved the etiologic relationship of these bodies to infection and demonstrated the developmental cycle in the cytoplasm of host cells (8, 9).

The intracellular life cycle is characterized by multistage development of a large cytoplasmic inclusion which eventually forms spherical, infectious particles 280 to 380 millimicrons in diameter, now called elementary bodies. Unlike true viruses, the cytoplasmic inclusions are basophillic, and multiplication by fission is exhibited at one stage of the cycle. This mode of multiplication places these parasites close to the rickettsiae, but they are excluded from the latter classification because arthropods have not been shown to disseminate the virus. Biochemical studies have shown also that psittacosis organisms are more closely related to the smaller viruses than to the rickettsiae (10). Psittacosis organisms, alone among the viruses, and akin to the rickettsiae, are sensitive to antibiotics. They are also inactivated in five minutes or less at 56° C. and are readily destroyed by 0.1 per cent formalin, 0.5 per cent phenol or 0.02 per cent alkyl dimethylbenzylammonium chloride. The viruses can be preserved indefinitely in a 20 per cent tissue suspension at —20° C. or lower (11).

The infective agents of psittacosis have been placed tentatively in the family Chlamydozoacae and the genus Miyagawanella (12). This classification has been followed, generally, by American microbiologists; however, it has been shown conclusively the inappropriateness of these terms, and justifiably the generic title of Bedsonia for psittacosis viruses has been proposed (13).

All the members of the group have similar tenctorial properties with respect to Macchiavello's, Castenada's and Giemsa's staining methods and can be observed in stained exudates and tissues of infected animals through the oil-immersion objective. They may form intracellular vesicles or extra-cellular aggregates up to 12 microns in diameter.

Viruses causing psittacosis or ornithosis in birds vary considerably in their pathogenicity for different species of birds and laboratory mammals. The ability of these agents to cause pathologic change and death in susceptible animals appears to be correlated with the ability of the infectious particles to produce toxin. Thus, highly virulent strains of virus such as have been isolated from turkeys, egrets and gulls, and in some cases humans, are called toxigenic strains. Viruses isolated from psittacine hosts are generally intermediate in their ability to produce toxin, and those from pigeons, doves, chickens, ducks and other birds have demonstrated a very low degree of toxigenicity, as measured in laboratory animals.

Table 2

Susceptibility of the Virus to Antibiotics (23)

Antibiotics Used	Dose Level/Egg	Percent Survival	Percent Mortality	Chicken Embryos Deaths Survivors
Virus control	None	0*	100*	24/0**
Streptomycin	1 mg.	0	100	24/0
	1.25 mg.	0	100	24/0
	25 mg.	0	100	24/0
	50 mg.	0	100	24/0
Dihydro-SM	25 mg.	0	100	24/0
	1.25 mg.	0	100	24/0
Neomycin	1 mg.	0	100	24/0
	2 mg.	0	100	24/0
Magnamycin	1 mg.	0	100	24/0
	2 mg.	10.6	83.4	20/4
Penicillin	100 units	41.7	58.3	14/10
	1000 units	60	40	8/12
	5000 units	87.5	12.5	3/21
Chlortetracycline	1 mg.		16.6	4/20
	2 mg.		4	1/23
Oxytetracycline	1 mg.	100	0	0/24
	0.5 mg.	100	0	0/24
Erythromycin	0.5 mg.	100	0	0/24

*10-day period of observation.

**Numerator indicates number of chicken embryos which died. Denominator indicates number that survived.

Droppings help to spread . . .

Psittacosis virus is found in large numbers in the droppings and nasal excretions of affected birds. A recent study has shown that the droppings of infected turkeys may contain as much as 100,000 mouse LD_{50} per gram (11). Epidemiological studies from early investigations of the disease have implicated desiccated excreta from infected avian hosts as the greatest source of infection for animals and man. The disease is primarily airborne and usually begins as a respiratory tract infection in susceptible hosts. Coprophagous activity among avian species may be responsible for some bird infections but is unlikely as a major mode of transmission. No conclusive evidence exists for egg transmission of organisms of the psittacosis group.

Human-to-human transfer is relatively rare, and the disease appears to be transmitted only in the terminal stages of the disease just prior to death.

Figure 1 illustrates the depressed appearance of turkeys with acute ornithosis. Characteristic bright yellow-green droppings spot the floor. The birds were infected with a toxigenic ornithosis virus by the airborne route (11).

Symptomology and pathology cloudy . . .

Psittacosis and ornithosis in birds and mammals may be manifested in different ways depending upon four basic factors:

the resistance of the host,
the virulence of infecting virus,
the number of infectious units of virus received,
and the route of infection.

Thus, a given species might react to exposure to a psittacosis virus with an acute illness terminating in death; whereas, another species given the same dose by the same route might develop a transitory disease terminating in complete recovery or a chronic carrier stage. Within each host species individual resistance, as influenced by age, presence of concurrent disease or physiologic stress, plays a significant role in the outcome of infection. Since a spectrum of virulence of the virus exists and potential hosts exhibit a wide range of susceptibility to infection, it is not possible to describe definitely the symptomology and pathology of psittacosis without regard to the four factors stated above. One researcher has aptly stated the case with the spontaneous disease in psittacine birds:

> **"Clinical manifestations in parrots, parakeets or conures infected with the psittacosis virus are not characteristic. In order to prove the nature of the disease, autopsy and laboratory examinations are imperative. Visibly 'healthy birds' may harbor the virus; and, as shedders, disseminate it, or the chronic carriers may, when transferred to unhygienic conditions, be the victims of fatal clinical disease. A whole spectrum of stages of infection, from fatal to latent, may be bridged by atypical and rudimentary cases, with few or only temporary transitory symptoms" (3).**

The general symptomology and pathology of psittacosis or ornithosis in susceptible avian hosts falls into several categories:

Acute stage. The clinical signs caused by a toxigenic virus are similar to those found in other systemic diseases: Anorexia, hyperthermia, weight loss, yellow or grayish-green color of droppings and a listless or droopy appearance (Figure 1). Egg production in breeding hens drops precipitously. Paralysis and death may ensue eight to 15 days after infection. Mortality in some flocks of birds may run as high as 30 per cent.

Large doses of viruses of low toxicity may cause similar signs (but to a lesser degree) in birds with low resistance. In flocks infected with such a virus, mortality may run five per cent or less. In healthy birds the only manifestation may be a transitory hyperthermia, a sleepy appearance and drop in egg production in breeding hens.

Toxigenic viruses generally produce a severe lower respiratory tract disease characterized by injected, thickened airsacs which may be covered with fibrinous exudate. In time, peritoneal or thoracic adhesions may result. Early in the acute stage a fibrinous exudate is present on the epicardium. In time, flakes of fibrin may become heavily encrusted on the epicardium and heart function is impeded (Figure 2). The liver may be enlarged and mottled with a greenish-brown color, occasionally studded with areas of necrosis suggestive of infarction. The spleen is usually enlarged and may be hemorrhagic or mottled in appearance due to a covering of inflammatory exudate. The kidneys may be soft, grayish and swollen. In infections resulting from inhalation of concentrated aerosols of infectious particles, the lungs may show massive congestion, resulting in the thoracic cavity being filled with fluid. This fluid may contain serum antibodies and large quantities of virus. Most birds spontaneously recover from this seemingly overwhelming infection and eventually eliminate the disease agent from their tissues, although residual lesions may remain for many months (11).

Less toxigenic viruses may cause similar but less severe lesions. Reproductive tract disturbances, as evidenced by ruptured yolks, are common in breeding hens. Some birds may show no visible lesions yet their kidneys, pericardial sac and airsacs contain large numbers of infectious virus.

The acute disease in psittacine birds caused by virus strains of intermediate toxicity is characterized by the presence of serous purulent exudate on the airsacs, fibrinous pericardial exudate and a fibrin film on the liver. The spleen may be enlarged four to 16 times (volume) and is soft and dark red. The liver is usually swollen, discolored, and sometimes spotted with necrotic lesions. The kidneys may be soft, friable, grayish and swollen. Lesions in the lungs are rare (Figure 3).

Inapparent stages. In enzootic psittacosis, most birds probably undergo a subclinical disease and recover completely. Certain species, however, those which are infected as nestlings by the virus-containing excreta of their parents, may develop a chronic, symptomless carrier state. These birds may remain visibly healthy while shedding copious quantities of virus into their environment throughout their lifetime. Such birds may exhibit no gross pathology except an enlarged spleen. This state of host-parasite balance occurs in psittacine birds and pigeons—and probably in other avian species. The fact that the viruses of psittacosis and ornithosis have found such comfortable ecological niches within certain hosts where both virus and host survive with only minor inconvenience probably represents the key to the perpetuation of these viruses in nature.

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Figure 2 shows the heart and liver lesions of a turkey naturally infected with a toxigenic ornithosis virus. Severe pericarditis and discoloration and enlargement of the liver are evident (11).

Figure 3 indicates the lesions usually seen in acute psittacosis in parakeets. The spleens are enlarged four to eight times; the liver may be mottled and swollen as in bird number 3. Viscera are moist with a fibrinous exudate. Normal bird is seen at the left, number 1.

Diagnosis is aided by laboratory workers . . .

Psittacosis or ornithosis can be adequately diagnosed only after a rise in serum antibodies to psittacosis organisms has been conclusively shown, or after a virus morphologically and antigenically similar to those of the psittacosis group has been isolated from the suspect host. Gross pathology or clinical observations are not sufficiently distinctive to be pathognomonic.

The standard complement-fixation tests employing killed psittacosis organisms as antigen have been used for the serodiagnosis of psittacosis in man for many years. A complement-fixation-inhibition method was developed in 1950 for the testing of avian sera for the presence of ornithosis antibodies (14); however, new, more simplified procedures for detecting avian ornithosis antibodies by agglutination reactions or by direct-complement-fixation methods have recently been developed (15, 16, 17). All suspect sera should be sent to state or university diagnostic laboratories for serodiagnosis since the performance and interpretation of the tests require experienced personnel.

Most psittacosis viruses can be isolated readily by inoculation of suspension of the suspect tissue into the peritoneum or nasal membranes of mice or into the yolk sac of embryonating chicken eggs. Three serial, blind passages of the spleens and livers of the mice or yolk sacs of the inoculated eggs which show no evidence of virus in additional laboratory animals are necessary to exclude the presence of virus from the original suspect tissue. This is advisable since psittacosis viruses of low toxicity sometimes require several passages in laboratory animals before multiplying sufficiently to cause visible lesions. The lesions seen in mice depend upon the toxicity of the virus being inoculated. After intraperitoneal or intranasal inoculation, virulent, toxigenic viruses usually cause death of the mouse within four to 15 days. Death with evidence of severe toxemia as the prime evidence of infection occurs early when large numbers of virus particles are injected. When small numbers of infectious particles are injected, death may be delayed until the virus has multiplied and exerted its toxic effect. In mice surviving 10 days after inoculation, splenic and hepatic enlargement becomes obvious as well as the presence of fibrinous, semipurulent exudates in the peritoneal and thoracic cavities. Intranasal inoculation invariably produces pneumonia, usually resulting in death of the animal.

Viruses of low toxicity, when cultivated in the peritoneal cavity of young mice, cause obvious enlargement of the spleen and liver. A fibrinous exudate is present in the peritoneal cavity from the fifth day on. Eventually, ascites develops. The peritoneal cavity may become so distended with fluid that the mouse is unable to move. Lung damage is rarely, if ever, present.

Psittacosis viruses usually grow well in the yolk sac of six to seven-day-old embryonating chicken eggs and may produce death of the embryo within four to 10 days depending upon the number of virus particles in the inoculum. Adaptation of new virus isolates to growth in the yolk sac by serial passages in eggs results in multiplication of virus sufficient to make recognition of intracellular elementary bodies in stained, infected yolk-sac smears possible.

Recognition of the virus in stained smears is greatly facilitated by examination of impression smears of the brain surface of laboratory animals inoculated intracerebrally with a psittacosis virus.

Preventive medicine is needed . . .

Psittacosis or ornithosis will always be a disease problem as long as the disease agent continues to be perpetuated in reservoir hosts. Most of the psittacosis group viruses derived from avian sources are infectious for man, and many are infectious for heterologous birds and mammals. Therefore, the supply of virus in nature appears unending. Since an inter- and intra-species chain of infection links different avian and mammalian hosts, eradication of the disease is difficult.

Killed vaccines have been considered as a possible measure for the prevention of psittacosis in persons whose occupation brings them in close contact with psittacine birds, poultry or wild birds, but the effectiveness of such a measure is not known. Immunity to reinfection after the natural disease in birds is common, and is observed in laboratory animals after artificial inoculation and infection. Vaccination of poultry as an anti-ornithosis measure is currently under investigation. Strict quarantine and treatment of newly imported psittacine or exotic birds has aided materially in lowering the disease incidence in man (18). Recent investigations have indicated that the chronic carrier stage of the disease in parakeets can be greatly reduced by carefully controlled antibiotic treatment. If the treatment regime and adequate follow-up studies were conducted on a national scale in all pet bird breeding establishments, one major source of infection could be effectively controlled (19).

Broad-spectrum antibiotics help . . .

Studies, screening chemotherapeutic agents and their activities against chick embryo ornithosis, show the following order of efficaciousness: tetracycline, oxytetracycline and erythromycin; then chlortetracycline and penicillin; then chloramphenicol; and streptomycin, dihydrostreptomycin, neomycin and magnamycin had no apparent efficacy (20, 21, 22, 23). In studies with turkeys known to be infected with ornithosis, control birds receiving no drugs yielded virus from the spleens in laboratory examination while those treated with oxytetracycline yielded no virus on examination (24).

Works of these men are cited . . .

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Regional Cattle Feeding Costs, Markets and Trends Compared

The downward adjustment of slaughter cattle prices that has occurred since May, 1960, has some important implications to the feeder cattle industry.

The average price received for all beef cattle sold during the January-July period of 1960 was 11% below the average price received during the same period in 1959. However, feed prices have adjusted downward only slightly during this time, as is indicated in Table 1 accompanying this article.

This table indicates the nature of the problem but does not tell the whole story. The data used in the chart is an average for the U.S. However, some important regional differences exist—especially in feed costs.

Prices for Choice 900-1,100 lb. slaughter steers for May 1959 and July 1960 are given for selected markets in Table 2.

EDITOR'S NOTE: The accompanying article describing the regional adjustments of cattle feeding includes information on comparative feeding costs, slaughter prices and price trends. The article appeared in the Western Livestock Round-Up bulletin issued by the University of Arizona. The general outlook, according to the article, is for cattle prices to work somewhat lower next year as a result of the large build-up of cattle numbers that has taken place during the last three years.

At the prices that prevailed in May, 1959, cattle feeders in all areas could put gain on cattle at a cost considerably below the value of the gain as represented by the sale price of a Good or Choice steer.

For example, if a feeder in Colorado calculated his total cost of feeding to be 22¢ per lb. of gain, and he sold Choice slaughter steers for $28, he realized a net of 6¢ per lb. over his feeding costs. This profit on the gain allowed him to "cheapen" the cost of the feeder steer. Consequently, last year, he could afford to pay $30-31 for Choice 500-800 lb. feeder steers even though slaughter steers were selling for $28.

However, when Choice slaughter steers are selling for $25.50 and if the cost of gain has decreased to 21¢ per pound, the margin on the gain has been reduced to about 4¢ per pound. Consequently, one must buy feeder steers differently than he did a year ago, not only because the value of the finished animal is lower but also because the net margin realized on gain has decreased.

Higher Cost Areas

Colorado is one of the more favored areas in terms of cost of gain for feeding beef cattle. Arizona and Southern California, on the other hand, are areas in which feed costs run substantially higher. The current charge in commercial feedlots in Arizona is $52 a ton for an 80% concentrate fattening ration.

In addition to the cost of feed in the commercial feedlot, the owner also has the additional costs of interest on investment, death losses, and veterinarian expenses. If a feed conversion ratio of 10-1 is achieved over the entire period of feeding (calculated on the basis of weight paid for and weight for which payment is re-

TABLE 1

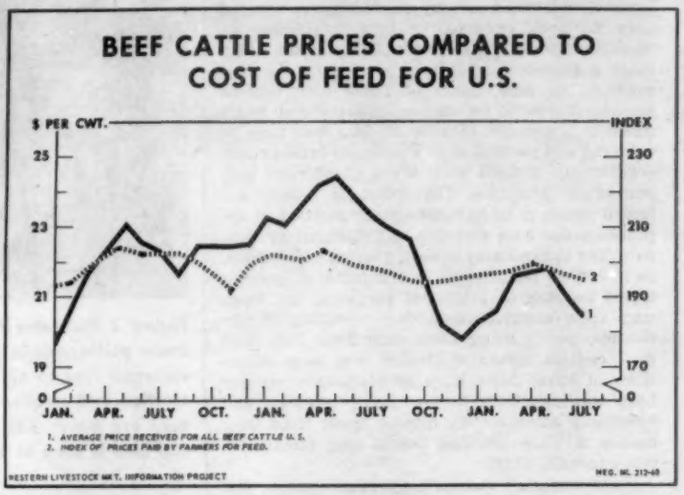

TABLE 2. Prices for Choice 900-1,100-lb. Steers

Market	May, 1950	July, 1960
Portland	$29.57	$26.98
Stockton	29.19	26.19
Visalia	29.55	25.71
Phoenix	29.38	25.68
Billings	27.31	24.22
Denver	28.20	25.54
Omaha	29.08	25.02
Chicago	30.99	25.73

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TABLE 3. Number of Cattle by Areas

Feeding area	Number of cattle on feed			
	1-1-57	1-1-58	1-1-59	1-1-60
	——000's omitted——			
California	496	398	504	663
Arizona	222	190	210	265
Colorado	246	251	338	385
Other western states*	420	420	484	591
Six Plains states†	1,269	1,250	1,486	1,638
Six Corn Belt states‡	3,095	3,013	3,205	3,330

*Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming.
†North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Texas.
‡Ohio, Indiana, Illinois, Iowa, Minnesota, Missouri.

ceived) then the cost of gain would be 26¢ per pound.

This would actually exceed the current Phoenix price of $25.68 for Choice slaughter steers. This means that the feeder is not able to "cheapen" the price of replacement cattle, but must buy them for less than the price he receives for slaughter cattle in order to break even.

Feeding Costs Vary

The relative importance of various areas in the feeding of cattle is indicated in Table 3. The 23 states included in this table accounted for 91% of all cattle and calves on feed in the U.S. on Jan. 1 this year. The state of Iowa represents 45% of the cattle fed in the six Corn Belt states.

It is difficult, or nearly impossible, to compare the cost per pound of gain between the various states. Cattle feeding in some areas is based on utilization of a by-product feed that otherwise might not be used, such as pea vine silage, peppermint hay, or beet pulp which are important feed constituents in some areas.

Wide variation also exists in the type of feeding program. A popular feeding program in some areas is the year-long calf feeding program. Calves are put in the feedlot in the fall and fed until the following summer on a high roughage ration. Then the grain content of the ration is increased and the silage content decreased until the steers are on a full feed of a high concentrate ration.

The steers reach Choice slaughter finish in late summer, almost a year after they are put in the feedlot. The rate of gain during the first six months is slower but at the same time the cost of gain during this period is proportionately lower.

A Washington feeder estimated that he could put gain on for less than 14¢ lb. during this growing phase of the feeding program. The deferred system practiced in Kansas is a variation of this program in which summer grazing is used to keep the cost of gain down.

In certain areas the large scale commercial feedlot predominates. This type of feeding enterprise is set up largely to feed out yearling cattle weighing around 700 lb. to a Choice grade slaughter steer weighing 1,050-1,150. The operation is highly mechanized and based on a large volume and quick turnover.

Most feedlots of this type like to have a turnover of 2-2½ times a year. These commercial feedlots may feed out some cattle on their own account but most of the cattle are on feed for other interests such as packers, range herd operators, super-markets, or others. This type of feeding operation is important in California, Arizona, and Colorado. However, it is increasing in importance in other areas.

In order to obtain some comparison of the cost of feeding in various important feeding areas, the cost of 1,000 therms of net energy was calculated for the different localities based on typical fattening ration used (see Table 4). The cost itself is not indicative of the actual cost of feeding because the prices used for many of the feeds were average prices received by farmers as of the 15th of the month.

These prices do not reflect the transportation and handling costs included in the price paid for the feeds laid down at the feedlot location. However, this comparison does bring out the important point that feed costs do run considerably higher in certain localities than others.

It is evident that the cost of feeding in California and Arizona tends to run higher than in other regions. Although these two feeding areas now face the problem of low or even negative margins on gain, slaughter cattle prices are still yielding positive margins in other areas. Consequently, these other areas have a distinct advantage in purchasing replacement cattle.

Increasing Problem

The general outlook is for cattle prices to work somewhat lower next year as a result of the large build-up of cattle numbers that has taken place during the last three years. Any additional decrease in slaughter cattle prices will intensify the problem that the California and Arizona cattle feeder faces.

The Corn Belt and Plains areas can still stand some additional downward adjustment of slaughter cattle prices before they reach the point where the cost of putting on weight exceeds the sales value of such gain.

Cattle feeders in California and Arizona have already taken steps to ease the situation. Higher concentrate rations are being used in an effort to lower the feed-conversion ratio and decrease the cost per pound of gain. A ration of rolled barley, rolled milo, and protein concentrate has proven quite successful in some lots.

Some feeders are going to lighter weight cattle in order to take advantage of the more efficient feed conversion ratio generally realized with these cattle. Feeders have also shift-

TABLE 4. Comparing Feeding Costs by Area

Feeding area	Cost of 1,000 therms of net energy July, 1960
California	$30.50
Arizona	31.32
Colorado	23.83
Six Plains states	23.50
Eastern Corn Belt	26.20
Iowa	23.83

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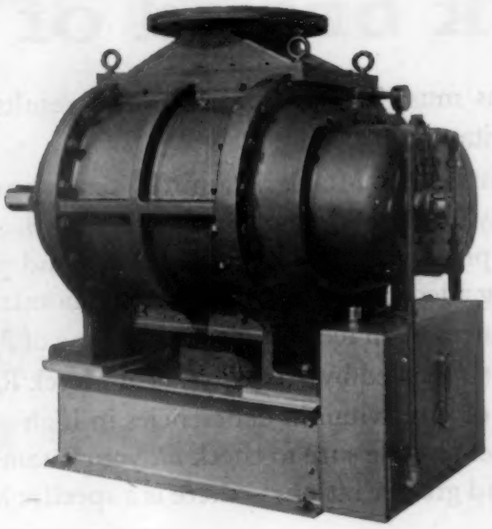

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FEED LOT FEEDING TRIAL PROVES:

CATTLE GAIN MORE AT LESS COST, WHEN FED MORTON T-M SALT

Photo courtesy of Denver Post

Average more than 9 lbs. extra gain per head at a saving of $1.34 per cwt. of gain during 109 day trial at Monfort Feed Lots, Inc., Greeley, Colorado.

How the feeding trial started. On July 23, 1959, Mr. Kenneth Monfort agreed to make a comprehensive divided lot test comparing Morton Trace-Mineralized Salt and plain salt. From a shipment of good quality Angus heifers received from San Saba, Texas (averaging about 550 lbs.) Mr. Monfort had 146 placed in lot #67 and 148 in lot #70.

For a period of forty-three days before the actual test was to start, all 294 cattle were fed identical rations with plain salt.

After 43 days the test began with the cattle being weighed up. The cattle in lot #67 remained on plain salt while the cattle in lot #70 received Morton T-M Salt instead. All other feeds were identical. The average daily ration consisted of 9 lbs. silage (green chop silage and silage out of pit), 16 lbs. grain mixture (approximately 10% dried beet pulp, 35% corn and 55% milo), 1½ lbs. dehydrated alfalfa and 1 lb. of shorts pellets with stilbestrol.

At the end of the feed lot trial on December 8, both lots of cattle were weighed out and feeding costs were calculated. The T-M fed cattle in lot #70 registered an average extra gain of 9.26 lbs. more than the cattle in lot #67 which were fed plain salt! What's more, the cost of gain for lot #67 was $19.97 per cwt. compared to $18.63 per cwt. for the cattle fed Morton T-M Salt in lot #70! The savings with Morton T-M were a profitable $1.34 per cwt. of gain!

The cost of feeding Morton T-M Salt for the entire 109 day test was less than 17¢ per head more than the cost of feeding plain salt for 109 days! For an extra 17¢ per head for Morton T-M, the Monforts saved $1.34 per cwt. of gain and got more than 9 lbs. of extra gain per head. Figure it out for yourself how much more you can make feeding Morton Trace-Mineralized Salt!

"This divided lot test sold us on the value of Morton T-M Salt. Using these test results, believe that we couldn't afford to feed cattle plain salt, even if we got it free."

Kenneth Monfort

Show this to your customers. Let them know these test results were obtained from the exclusive formulation of trace minerals and salt available only in Morton T-M Salt. When customers read about this test, they'll want Morton Trace-Mineralized Salt for sure. So be sure you have enough on hand. Order now from your Morton salesman or write:

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FLEA-KILLING DOG FOOD AHEAD?

CORVALLIS, ORE.—A chemical treatment for dog food, just announced by Oregon State College, holds the promise of making man's best friend flea-free.

Dr. R. L. Goulding, OSC Agricultural Experiment Station entomologist, reports that trial dosages of chemicals (their specific identity not announced) mixed with dog food have entered the bloodstream of test dogs without noticeable injury to the dogs but with deadly effect on the fleas that nipped them.

He says experiments with chemicals to control insects that bite cattle suggested the idea for the dog treatment.

At the end of a four-day trial, 85-95% of the fleas planted on test dogs were dead.

The chemicals have this bonus effect: Veterinarians discovered that the chemicals sharply reduced stomach worms in the test dogs.

Preliminary findings suggest some unanswered questions: How much chemical could a dog take for long periods without damage? How much chemical is needed to keep a dog flea-free? What would the treated food cost and how long could it be stored?

ed to feeding the Texas, Louisiana, and Oklahoma crossbred steers. These cattle are not fancy to look at but have done well in the feedlot, both in terms of rate of gain and the proportion of carcasses that make Choice grade after slaughter.

Feeders in other feeding areas have experimented with these cattle during the past year and have been pleased with the results. Consequently, there will be more competition for these cattle in the future.

As the squeeze on feeding margins becomes greater in the California and Arizona area, a natural consequence might be that feeders start feeding out for a grade of Good rather than for Choice. This grade is much cheaper to produce than Choice. It requires about 22% more feed to take a yearling steer from 950 to 1 050 pounds than it does from 850 to 950. It takes about 28% more feed to take the same yearling from 1,050 to 1,150- than needed to go from 950 to 1,050. Therefore, feeding costs can be kept down by going to market with a little less finish and keeping away from the high cost of gain feeding period — namely, that extra gain necessary to reach the Choice grade. If this situation does develop, the West Coast market will, no doubt, draw heavily on areas with lower fattening costs for Choice grade of beef. Denver is the nearest source of sizeable supply of this grade of beef.

Hold Golf Outing

DENVER, COLO. — The Denver Feed & Grain Club held its annual golf tournament at the Green Gables Country Club recently. The highlight of the annual fun outing was the hole-in-one made on the 155-yard 16th hole by Dave Page, manager of Denver Elevators of Colorado Milling & Elevator Co.

Steve Treacy took top honors and the traveling Fred Lake Trophy, and Flint Harding won the golf bag for second place. Jim Cox and Lou Tandy also won prizes. More than 70 members attended the awards banquet.

Bulk Feed Loading Station Planned

ALBANY, N.Y.—A bulk feed loading station costing $180,000 is to be built by Cooperative G.L.F. Exchange, Inc., adjacent to its mill at the Port of Albany.

Ground has been broken and the new station should be in operation by January, according to Fred Marks, G.L.F. plant manager.

The $90,000 contract to construct the building has gone to McManus, Longe & Brockwehl, Colonie. Another $90,000 will be spent equipping the building with electronic loaders and truck-weighing scales.

Mr. Marks said the new loading station is being built to handle a rapid growth in bulk feed tonnage sales. The station will have an overall storage capacity of 320 tons in 32 overhead bins with a capacity of 10 tons each.

Trucks will drive under chutes and be loaded in a "push button" operation. Scales will weigh trucks before and after loading.

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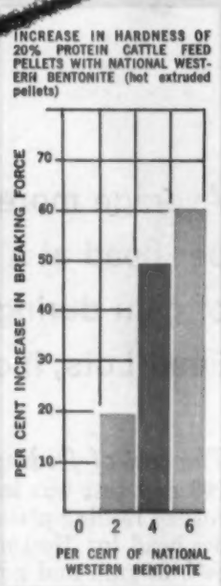

The accompanying chart shows the increase in pellet hardness with varying percentages of NATIONAL Western Bentonite included in the feed formula.

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JOE BROOKS

BY AL P. NELSON

DONT FORGET THE EMPLOYEE

Pop Henley came ambling into Joe's office late one afternoon, his face serious. Pop was a part time worker at the mill — had been for many years. Up in his 70's, Pop was the sort of fellow who never seemed to grow old. A former mayonnaise salesman, he liked the quiet and friendliness of Hansen's Creek, and he was excellent when it came to visiting with farmers and engaging them in friendly talk.

"Joe," said Pop, taking off the lettered feed mill cap he usually wore and revealing a gleaming bald head, "I just got an idea."

The brown-haired feed dealer grinned. "Well, Pop, you know this is one place where we always hear an idea out. Some prove to be very good, others not so good."

"Business is like baseball," chuckled Pop. "One day you hit a home run, the next day you may strike out."

"Yes, you have to take things in stride," Joe agreed. "A businessman has to have bounce. He may be knocked down by problems but he's got to bounce right back and try again. What's your idea, Pop?"

Pop sat in a chair and crossed one heavy overalled leg over the other. "Joe," he said, "just yesterday you mailed out Joe's Monthly Bulletin to 1,200 farmers, didn't you?"

The feed dealer nodded. "That's right. We've been doing that for quite a few years. And it pays. In that monthly bulletin, Pop, we get a chance to tell the farmers a great many things—and in more detail—than we do when we talk with them briefly here at the mill or on their farms."

"And when you've got it down in mimeographed form, the farmer can reread it when he has time, and his wife and the rest of the family can read it, too," Pop suggested.

Joe nodded. "And we've got lots to tell farmers nowadays, too, especially with bulk, pelleting, grain bank, complete feed and lots of other things."

Employee Bulletin

"We certainly have, Boss." Pop scratched his head, then said, "Joe, if a monthly bulletin to farmers pays off, why don't you issue a monthly bulletin for all your employees?"

The feed dealer was so surprised he could hardly speak for a moment. "A bulletin to employees! Is that necessary?"

"Maybe not exactly necessary, Joe," put in Pop softly, "but it would be darn smart merchandising."

"In what way?" Joe asked.

Pop chuckled. "Well, let me put it this way, Joe: Do you think that all of us who work for you know how to sell bulk feed or pelleting service or complete feed the way you do? Do we know all the new products you put into stock and how to sell them?"

Joe blinked. "Why, Pop, I'm telling you fellows all these things at the monthly sales training meetings. We go over this in some detail."

"I know we do, Joe, but I was reading the other day that people remember 50% more of what they see than what they hear. Now maybe that applies in feed merchandising, too. How do you know we employees remember 100% of what you tell us at those sales training meetings?"

A frown appeared on the face of the feed dealer. "Say, Pop, that's right. You mean, if I would issue a monthly bulletin to employees I could summarize what took place at the sales meeting and thus make the points more clear — so they would stick?"

"Exactly," Pop grinned. "Then we could look over those monthly bulle-

(Turn to JOE BROOKS, page 80)

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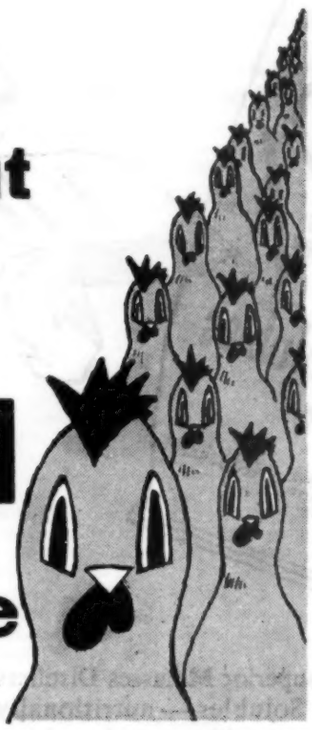

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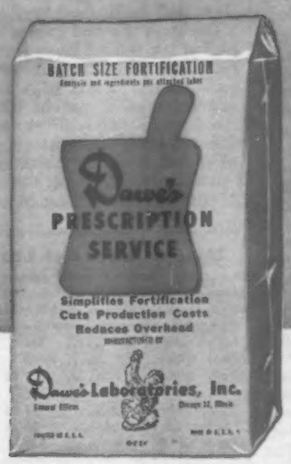

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Efficiency of Feed Utilization

The influence of several factors needs careful consideration when feed efficiency is used as a yardstick to evaluate cattle rations or management.

By Dr. J. H. Meyer
University of California

"Feed per 100 pounds of gain," the most common term for measuring the efficiency of feed utilization, is influenced by many factors. How these factors influence feed per 100 lb. of gain need careful consideration when livestockmen use this yardstick to evaluate rations or their management procedure.

The energy content of the steer, degree of finish, and the net energy content of the feed greatly influence feed per 100 lb. of gain. Table 1 gives data from one of our experiments, illustrating these points.

Two rations were used, 0 and 60% concentrate. One of each was pelleted while the other was a milled ration, giving a total of four rations.

First, the net energy content of these rations did influence the feed required per 100 lb. of gain. When an all-hay ration was used, whether fed as chopped or pelleted hay, much more feed was required, even though the gains of the steers fed the hay pellets (lot 3) were as great as the steers in lot 4 with 60% concentrate.

Second, energy content or amount of fat in the carcass influenced feed per 100 lb. of gain because the more fat, the more feed needed for the same gain. Let's look at the steers on the high-concentrate rations. Lot 2 steers were fatter than those in lot 4, and even though they ate and gained more, efficiency as measured by feed per cwt. of gain was down.

A problem remained: Was there an advantage in pelleting the high-concentrate ration? Less feed was required per 100 lb. of gain while the ration was pelleted, but the steers were not as fat; it would have taken longer to fatten them to a choice grade. Here, incorrect conclusions would have been drawn if only efficiency of feed utilization as measured as feed per 100 lb. of gain has been used.

Always look at the net energy or TDN content of the ration or the finish of the steer before using feed per 100 lb. of gain to aid in making a management decision. Let us look at these and other factors in greater detail.

Influence of feed energy. Table 2 gives several rations composed of feeds varying in net energy content. Net energy is used rather than TDN because net energy is the best measure of feed energy when comparing roughages and concentrates.

Ration 1, containing 70% concentrate, will be used as a standard. Approximately 735 lb. of feed is the amount estimated to be required for 100 lb. of weight gain. If a poor-quality roughage (cottonseed hulls) replaces part of the alfalfa and oat hay, an additional 20 lb. of feed will be required per 100 lb. of gain.

Even more marked is the effect of increasing the roughage content. When 10% more alfalfa hay is added, the feed required per 100 lb. of gain is increased from 735 to 776 lb.

Changing the quality of concentrate has a more marked effect than the quality of roughage. Here it is estimated that the light-weight barley would increase the feed needed by 65 lb. per 100 lb. of gain.

Fat is being used quite often in western feedlot rations, and its effect is dramatic on efficiency of feed utilization. Only 3% fat instead of 3% barley reduces the estimated feed needed per cwt. by 30 lb.

Influence of finish. Finish, or fat content, has a tremendous effect on the term, "feed per 100 lb. of gain." If two steers are compared—one finished to choice and one to good—calculations show that much more feed is needed for the steer which fattens more rapidly. Table 3 shows a calculated comparison assuming equal gains but one containing more fat.

The fattened steer will have about 23.8% fat in his carcass when choice and 18% fat if in the good grade. If they gained the same—2.75 lb. per day—three more pounds of feed will be needed daily to finish as choice rather than good. Furthermore, feed increased per cwt. of gain—690 lb. for the choice steer and 582 lb. for the good steer. A conclusion could not be drawn from efficiency of feed utilization only; 110 lb. less feed would be needed for the good steer, but he would not sell as well because he would not be as fat!

Of real influence on body composition is the quantity of fill in the stomach of steers. Table 4 assumes a 600-lb. carcass and a change of 35 lb. in rumen content. Changes or differences of this magnitude have been found in many of our experiments.

Even though dressing percent changes by 2% and daily gain by 0.32 lb., it can be shown further that efficiency of feed utilization changes markedly; the effect varies from 75 to 97 lb. Consequently, animals need to be weighed correctly and in a consistent manner if liveweight gain is to be used with any degree of assurance. Probably carcass weight is more reliable as a true weight of an animal; at least fill variation is not a problem.

Influence of size. Size of an animal can have a marked effect on feed per 100 lb. of gain. If we assume that gains and composition of gains are equal for a 900- and a 700-lb. feeder steer (Table 5), then more feed will be needed per day for the larger animal. About 3.5 lb. extra of daily feed will be needed to make the same gain because the larger steer needs more feed to maintain his larger body.

A greatly increased amount of feed is needed per 100 lb. of gain, also. This increases by 125 lb. if a 900-lb. feeder steer is used rather than a 700-lb. steer. It is therefore incorrect to compare rations or management procedures if the steers are different in size and efficiency of feed utilization is used as a measure. This is another reason why differences between what happened this year and last year should not be compared—maybe the steers were of different size!

Influence of rate of gain or feed intake. These can be discussed together if we assume steers are equal in size and equal in body composition. This is shown in Table 6.

If a steer eats more (3.06 lb.) and gains more (0.75 lb.), much less feed will be required per 100 lb. of gain. Here, 125 lb. of feed would be saved if the steer ate and gained more. The reason for this: a large proportion of feed was used for gain rather than maintenance of his body because he reached market size in 109 days instead of 150 days. Steers have to be selected from the same lot, therefore, whenever feeds or management procedures are compared; otherwise, one might draw the wrong conclusion be-

Dr. J. H. Meyer

AUTHOR—Dr. J. H. Meyer is chairman of the department of animal husbandry at the University of California at Davis, having recently been named to that position. He was reared in Idaho and was graduated from the University of Idaho in 1947. Dr. Meyer received his Ph.D. degree from the University of Wisconsin in 1951. He has been at the University of California since that time, working in nutrition research.

TABLE 1. Example of the Effect of Carcass Composition and Ration Net Energy on Efficiency of Feed Utilization

	——Milled ration——		——Pelleted ration——	
	Lot 1: alfalfa 100%	Lot 2: alfalfa 40% concentrates 60%	Lot 3: alfalfa 100%	Lot 4: alfalfa 40% concentrates 60%
Average daily gain, lb.	1.75	2.46	2.22	2.14
Daily feed consumed, lb.	19.3	20.0	22.4	16.3
Feed per cwt. gain, lb.	1,103	809	1,010	768
Dressing percentage	56.5	59.5	57.3	60.5
Fat content of carcass, %	18.0	26.3	20.3	22.9

TABLE 2. Influence of Feed Energy

Feeds	Net energy per 100 lb.	Ration 1	Poor quality roughage	Increased roughage	Light weight barley	Added fat
	therms	%	%	%	%	%
Alfalfa hay	41	20	15	30	20	20
Cottonseed hulls	29	..	15	..	..	..
Oat hay	38	10	..	10	10	10
Barley	71	37	35	32	..	34
Barley, light weight	60	..	..	..	37	..
Beet pulp	74	18	18	13	18	18
Cottonseed meal	72	5	7	5	5	5
Molasses	56	10	10	10	10	10
Fat	160	..	..	..	..	3
Net energy, therms/100 lb		60.8	59.3	57.6	56.0	63.5
Feed/day, lb.*		20.2	20.7	21.4	22.0	19.4
Feed/100 lb. gain, lb.		735	754	776	800	704

*The quantity of feed needed to supply 12.3 therms of net energy per day. This should give an estimated daily gain of 2.75 lb.

TABLE 3. Influence of Finish

(Assume that a 700 lb. steer grading standard and containing 14.5% fat will be fed to either choice or good)

	Fed to choice	Fed to good
Initial weight, lb.	700	700
Initial fat, %	14.5	14.5
Days on feed	109	109
Daily gain, lb.	2.75	2.75
Final weight, lb.	1,000	1,000
Final fat, %	23.8	18.0
Daily gain in energy, therms	5.99	4.16
Total energy required daily	11.49	9.66
Feed required per day*	18.9	15.9
Feed/100 lb. gain*	690	580

*A 30% roughage, 70% concentrate ration containing 60.8 therms per 100 lb., ration 1.

TABLE 4. Influence of Fill

	Small fill, lb.	Normal fill, lb.	Large fill, lb.
Initial weight, lb.	700	700	700
Final weight, lb.	965	1,000	1,035
Final carcass weight, lb.	600	600	600
Fill in stomach	30	65	100
Dressing percentage	62	60	58
Daily gain, lb.	2.43	2.75	3.07
Feed consumed, daily, lb.*	20.23	20.23	20.23
Feed/100 lb. gain, lb.*	832	735	658

*A 30% roughage, 70% concentrate ration containing 60.8 therms per 100 lb.

TABLE 5. Influence of Size

	Large steer, lb.	Small steer, lb.
Initial weight	900	700
Final weight	1,200	1,000
Daily gain	2.75	2.75
Days on feed	109	109
N.E. required/day	14.4	12.3
Feed required/day*	23.7	20.2
Feed/100 lb. gain*	860	735

*A 30% roughage, 70% concentrate ration containing 60.8 therms per 100 lb.

TABLE 6. Influence of Rate of Gain and/or Feed Intake

	Rapid gains	Slow gains
Initial weight, lb.	700	700
Final weight, lb.	1,000	1,000
Daily gain, lb.	2.75	2.00
Days on feed	109	150
N.E. required/day	12.30	10.44
Feed required/day*	20.23	17.17
Feed/100 lb. gain	735	860

*A 30% roughage, 60% concentrate ration containing 60.8 therms per 100 lb.

TABLE 7. Influence of Increased Maintenance Requirement

	Optimum	High
Initial weight, lb.	700	700
Final weight, lb.	1,000	1,000
Daily gain, lb.	2.75	2.75
Energy requirement, therms:		
For maintenance	5.50	7.50
For gain	6.80	6.80
Total	12.30	14.30
Feed intake, lb.*	20.23	23.51
Feed/100 lb. gain, lb.*	735	855

*A 30% roughage, 70% concentrate ration containing 60.8 therms per 100 lb.

cause one group might naturally be slow gainers.

Influence of maintenance requirement. Suppose the weather turned bad or a subclinical disease hit the lot, or a group of steers were extremely nervous; how would this influence feed per 100 lb. of gain? In all of these cases more feed would be needed daily for maintenance of these steers. Table 7 assumes equal gains and body composition again, but with poor management to increase the maintenance requirement.

If it is assumed that 2.5 lb. more feed were needed daily, this would be magnified to 120 lb. extra feed needed per 100 lb. of gain. In other words, good management saves feed and may make the difference between profit and loss.

One purpose of this article has been to cast doubts on the complete reliability of the use of feed per 100 lb. of gain to compare rations or management procedures. Nonetheless, feed per 100 lb. of gain has its uses, but one should always be sure that degree of finish (as indicated by grade or, more accurately, by carcass fat content), weighing conditions (to equalize the effect of rumen fill), net energy content of the ration, size of steer, and sources of steers are the same.

All these things being equal will add to the reliability of efficiency of feed utilization, but even more precision can be added when evaluating a feeding situation.

Suppose, in looking over the feeding records for the year, it is noted that steers fed the same ration varied greatly in size, daily gain and in the amount of feed used per 100 lb. of gain. Table 8 presents some actual feedlot data. Over a period of months there was great variation in efficiency of feed utilization. Did the feed vary so much in quality that from 960 to 1,560 lb. of feed were needed per 100 lb. of gain?

Two major questions are raised from the data in the upper half of the table: Was this good efficiency of feed utilization and what caused the differences in efficiency of feed utilization between the various lots?

To analyze the situation, tables are needed to give the estimated energy needs of the steers. Table 9 shows the estimated net energy requirements of steers of various sizes gaining at different rates. These requirements were estimated from experiments conducted at the University of California. To make this more useful, the net energy requirements are converted to daily amounts of feed needed (table 10).

A ration containing 60.8 therms of net energy was used (ration 1 of table 2).

The question of whether this was good efficiency of feed utilization can best be answered by comparing the actual feed intake to the estimated requirement of a ration of known net energy content. In expanding on table 8, the estimated daily feed needed is found in table 10 and entered in line "e."

For example, in lot 1 an average weight of 850 lb. and a weight gain of 2.98 lb. per day result in an estimated 21.2 lb. of feed required for

(Turn to page 32)

TABLE 8. Evaluating Feed Efficiency

		1	2	3	4	5
(a)	Average weight, lb.*	850	746	1,075	1,050	1,025
(b)	Daily gain, lb.	2.98	2.97	2.18	1.91	1.65
(c)	Feed/day, lb.	30.3	28.5	28.8	27.9	25.8
(d)	Feed/100 lb. gain, lb.	1,020	960	1,320	1,460	1,560
(e)	Estimated feed required,† lb.	21.2	19.2	21.4	20.1	18.1
(f)	Consumed % of req.	143	148	135	139	142

*During feeding period.
†Based on a ration containing 60.8 therms per 100 lb.

TABLE 9. Daily Net Energy Required, Therms

		Daily gain							
	Maint.	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50
Average weight:									
700	4.8	8.5	9.0	9.6	10.1	10.6	11.2	11.7	12.3
750	5.0	8.9	9.5	10.1	10.6	11.2	11.8	12.3	12.9
800	5.2	9.4	10.0	10.6	11.2	11.7	12.3	12.9	13.5
850	5.5	9.9	10.5	11.1	11.8	12.4	13.0	13.6	14.2
900	5.7	10.3	10.9	11.6	12.2	12.8	13.5	14.1	14.8
950	6.0	10.7	11.4	12.0	12.7	13.4	14.1	14.7	15.4
1,000	6.2	11.0	11.7	12.4	13.1	13.8	14.5	15.2	15.9
1,050	6.4	11.5	12.2	13.0	13.7	14.4	15.1	15.8	16.6
1,100	6.7	11.9	12.7	13.4	14.2	14.9	15.7	16.4	17.2

TABLE 10. Daily Feed* Required of a Ration Containing 60.8 Therms Per 100 Lb.

	Daily gain								
	Maint.	1.75	2.00	2.25	2.50	2.75	3.00	3.25	3.50
Average weight:									
700	7.8	14.0	14.9	15.8	16.6	17.5	18.4	19.3	20.2
750	8.2	14.7	15.6	16.6	17.5	18.4	19.3	20.2	21.2
800	8.6	15.4	16.4	17.4	18.3	19.3	20.3	21.3	22.2
850	9.1	16.4	17.3	18.3	19.3	20.4	21.4	22.4	23.4
900	9.4	16.9	17.9	19.0	20.1	21.1	22.2	23.2	24.3
950	9.8	17.6	18.7	19.8	20.9	22.0	23.1	24.2	25.3
1,000	10.1	18.1	19.2	20.4	21.5	22.7	23.8	24.9	26.1
1,050	10.6	18.9	20.1	21.3	22.5	23.7	24.9	26.1	27.3
1,100	11.0	19.6	20.9	22.1	23.3	24.6	25.8	27.1	28.3

*90% dry matter basis.

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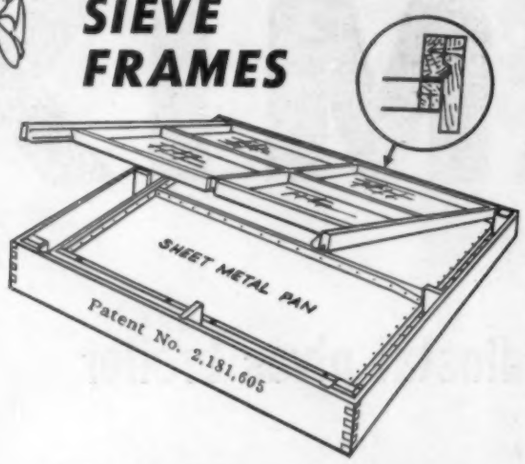

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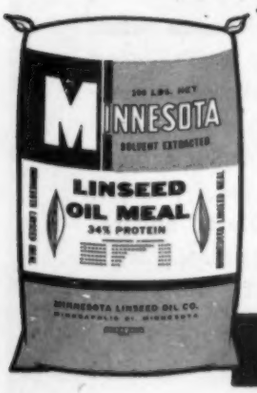

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this size and weight gain. This is much less than the 30.3 lb. actually consumed. A comparable result was found for all lots.

It could be speculated that the energy content of the ration fed was lower in quality, and an examination of the constituents for quality might provide a reason. Adequate sampling of the feeds and chemical analysis would be advisable in order to locate poor quality feeds.

An answer to the question about the variation in efficiency of feed utilization among lots can be provided by dividing the feed actually consumed by the estimated requirement

(for lot 1: $\frac{30.3}{21.2} \times 100 = 143\%$).

An inspection of these figures for the various lots reveals little difference other than the variation one would expect from environmental influences. Therefore the variation between lots was caused by differences in size and rate of gain and was not due to variation in quality of feeds in the ration during the season.

Why some of the lots did not eat more to enable them to gain more cannot be answered by these figures. One must look at management. Was there a difference in genetic background? Did a disease occur in some lots? Did abnormal weather conditions have an influence? Other questions could be asked, but at least the direction of the investigations on efficiency of feed utilization can be guided toward certain channels.

Test Feeding Out To Specifications

CHEYENNE, WYO. — An experiment designed to prove that Wyoming cattle can be fed out to specifications on ranches in the state is currently taking place or will start in the very near future in at least four different areas, it has been announced.

These trials are taking place in Cheyenne, Sheridan, Wheatland, Gillette, Pine Bluffs and Casper and are under the supervision of Wyoming's Ralston Purina dealers. They plan to use barley or milo as a base.

The possibility of "feeding out" in Wyoming is one that stimulates the imagination, when it is noted that out of 1,200,000 cattle in Wyoming less than 50,000, or roughly 4%, are on feed during most of the year, according to the report.

Specialist Named

ORONO, MAINE—Frank D. Reed, Maine cooperative extension service poultry marketing specialist, has been named to serve as acting assistant director of the service while Edwin H. Bates is on sabbatical leave for the academic year, it has been announced here by George E. Lord, director.

Mr. Bates will study administration at the National Agricultural Extension Center for Advanced Study, University of Wisconsin.

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CONSTRUCTION—This picture shows the progress in the construction of the new Supersweet Feeds mill at Le Mars, Iowa. Work is underway on the plant office and warehouse also.

New Iowa Supersweet Mill Shows Progress

LE MARS, IOWA — Construction on the new Supersweet Feeds mill here is progressing rapidly.

The plant walls and ingredient bins are almost completed. Work is also under way on the plant office and warehouse.

The new mill at Le Mars is the third new feed mill to be erected by International Milling Co.'s Supersweet Feeds division in the past two years. Supersweet presently operates a total of nine other feed plants in the U.S.

Facilities at the new plant will allow the handling of both sacked and bulk ingredients as well as sacked and bulk finished feed.

Adjacent to the plant, a 50-ton scale will obtain weights on incoming truck shipments and accurately weigh outgoing loads of finished feed.

Production at the new mill is expected to start by mid-October, said Lloyd E. Workman, vice president of the Supersweet division. The mill will incorporate all of the latest techniques in the manufacture of formula feeds including bulk handling and storage of products.

"Ample bulk finished feed facilities located above the scale will discharge at a rate of 2 tons per minute to provide our customers with prompt deliveries," said Mr. Workman.

When the mill is in full production, we'll be able to provide freshly mixed feeds to any point in our area of distribution within 24 hours after the order is received."

When in full production, the plant at Le Mars will produce a complete line of over 70 different formula feeds.

NEW VITAMIN SOUGHT

★

CLEMSON, S.C. — The food technology and human nutrition department at Clemson College is searching for a new vitamin or "unidentified growth factor" which appears to be present in certain feeds.

Researchers at Clemson have determined the presence of this vitamin in such feeds as alfalfa and Coastal Bermuda grass now.

The first step in identifying this new vitamin has been the development of a microbiological assay which requires finding a species of bacteria needing the vitamin for growth.

At the present time, animal feeding studies are being carried out in a small animal laboratory to determine the effect of the vitamin on their growth. Biochemical analyses also are being conducted to identify the compound responsible for the added growth.

Mrs. Gail S. Bosley, a graduate research assistant, is conducting the research project. She is working under the direction of Dr. H. O. Wheeler, assistant nutritionist, and Dr. J. H. Mitchell, Jr., head of Clemson's food technology and human nutrition department.

Bemis Promotion

ST. LOUIS — Addison M. Smith, cost analyst for the western operations of Bemis Bro. Bag Co., has been appointed assistant to the president of the company, Judson Bemis, president, has announced.

Mr. Smith will move from the Bemis western operations headquarters in San Mateo, Cal., to the office of the president in Minneapolis. Including his years of service with the Jaite Company, St. Helens, Ore., which was acquired by Bemis in 1941, Mr. Smith has had more than 25 years of service with the company. He was office manager for Bemis in St. Helens and in Vancouver, Wash., before becoming western operations cost analyst in 1956.

FEEDLOT TO EXPAND

HINKLE, ORE.—Faye and Irvin Mann's Beef City feedlot north of here is being expanded by one-third. The new feedlots will increase Beef City's capacity to 4,000 cattle and increase the feedlot's total area to 20 acres.

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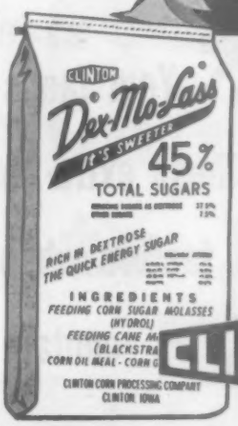

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EAST LANSING, MICH.—A forecast of future lamb prices and a description of the packer's part in the lamb industry were discussed on the program at the recent lamb feeders' day at Michigan State University.

"I think the lamb raisers can go ahead and make money," said Donald Stark of the Michigan agricultural economics department. "They are not in bad shape.

"There will be a pressure on prices because of a 2% larger lamb crop this year and because of an early range movement. The big supply could ease off by this fall, however, giving a fair market for lambs bought now as feeders.

"A slack feeder demand has the market $2 to $5 below 1959. Feeder prices often hold fairly stable or even advance during August to October while slaughter prices decline."

Mr. Stark discussed past price trends and said that there is usually a high in late spring and a low in late fall. He said that Michigan slaughters 900,000 lambs but markets only 225,000.

Roy Green of the agricultural research division of Swift & Co., Chicago, discussed the packing end of the lamb industry.

"The field of processing is changing very rapidly," Mr. Green said. "We, as processors, are feeling the impact of mass merchandising by the supermarket. This has compelled processors to change their procurement procedures.

"In centralized buying, the chain supermarkets demand lambs of a very certain size, shape and quality in carload lots and we have to meet those demands to sell to them. You producers must grow the kind, weight and quality of lamb the consumer wants."

Mr. Green said that if lamb could be taken out of the specialty class and put on a broader base, it would go along toward helping production.

He noted that two areas — the states north of Washington, D.C., and those on the west coast—particularly California — consume 75% of the lambs marketed. The other 25% is spread over the rest of the country.

NEW FEED FIRM

MUSCATINE, IOWA—A new firm, Custom Feeds, Inc., has been formed here with Ross McGlothlen, president and general manager. Joe Rauch is vice president and secretary. The firm will handle Rath hog, poultry and cattle feed and do custom mixing.

Market Needs Grow For Uniform Meat

DENVER, COLO.—"Concentration of livestock will continue as the retail market needs for uniform quality and stability of supply grow even greater." This was the opinion Dr. George L. Mehren, director, Giannini Foundation of Agricultural Economics, University of California, expressed recently.

Speaking at the 97th annual meeting of the American Veterinary Medical Assn., Dr. Mehren said that the meat and livestock industries have changed more during the past 30 years than in all their preceding commercial history.

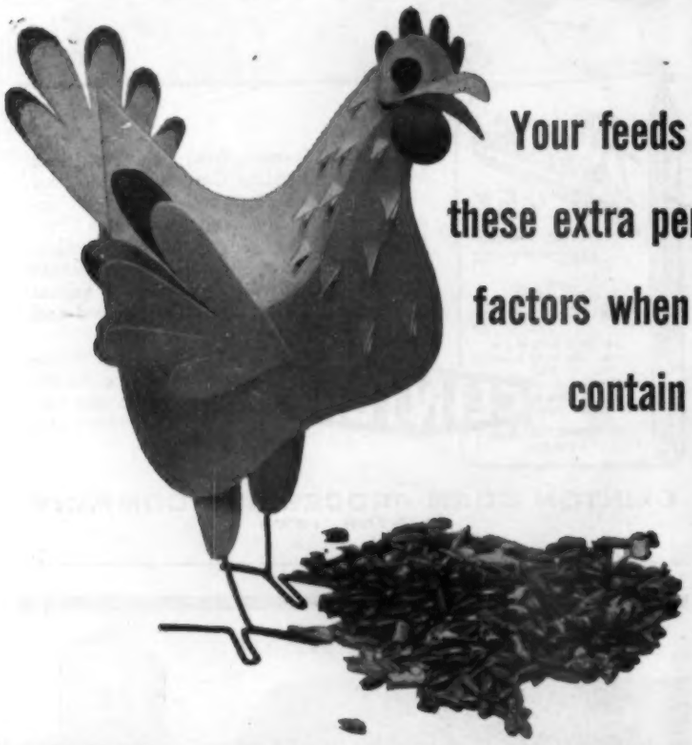
Processing and packing industries, along with the feed and range operations of livestock men, have had to adjust to new demands of consumers and distributors. "The economy has increased in size by 120% since 1930," Dr. Mehren said, "and real per capita income to wage earners is 66% higher. These changes are especially relevant to demand for meat products. The present market should increase by 50% over the next 20 years. All classes and areas now have equalized access to a nationwide market for livestock and meats."

New consumer preferences for foods are rooted largely in increased per capita income, which is always associated with increases in money demands for meat products, according to the agricultural economist. All stages of a complex industry must now be quite closely interrelated, he said, including the part played by veterinarians.

Researcher Named

KANSAS CITY — Dr. Harold B. McGrath has been appointed to the research staff of Chemagro Corp. here as research veterinarian. He was formerly engaged in private practice.

In his new position, Dr. McGrath will be responsible for the evaluation of new chemicals, for use in the field of veterinary medicine, being developed by Chemagro Corporation in association with Farbenfabriken Bayer, A.G., West Germany.



Your feeds supply these extra performance factors when they contain Tenox BHT AGRICULTURAL GRADE

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Here are four sound reasons for incorporating Tenox BHT-Agricultural Grade into your feeds.

Tenox BHT protects the all-important vitamin balance you build into your feeds.

Tenox BHT improves pigmentation in poultry by increasing the utilization of Vitamin A.

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Tenox BHT-Agricultural Grade was developed to meet the specific needs of poultry feed manufacturers. It is the result of information provided by feed manufacturers combined with our own extensive knowledge of antioxidant performance.

Build extra performance into your feeds by specifying the antioxidant specially made by Eastman for feed use...Tenox BHT-Agricultural Grade. Tenox BHT-Agricultural Grade is available from leading distributors throughout the country. To find out how you can use this antioxidant in your feed formulations, write today to EASTMAN CHEMICAL PRODUCTS, INC., subsidiary of the Eastman Kodak Company, KINGSPORT, TENNESSEE.

Tenox BHT-Agricultural Grade available in 2 forms

1. Tenox BHT (Cone.)-Agricultural Grade which may be added to your own diluent.
2. 25% Tenox BHT Premix, containing 25% BHT on a nutritive cereal carrier.

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For Timely, Useful Industry Information
FEEDSTUFFS

Stilbosol.

(diethylstilbestrol premix)

BEEF GAIN BOOSTER

398 college tests prove Stilbosol feeders get back an average of $11.57 for every $1 invested in this proved gain booster.

6 years of tests show...

Stilbosol pays off at a whopping 11 to 1 return

398 Experimental Comparisons*	Number College Experiments Compared	Gain Stimulation	Feed Savings	Based on Current Prices: Return Per Animal	Est. Cost/ Animal	Return Per $ Invested
STILBESTROL (10-Mg. Oral) (Fattening Ration)	105	13%	10%	$6.94	$0.60	$11.57
STILBESTROL (10-Mg. Oral) (Growing Ration)	58	12%	10%	$5.63	$0.60	$9.38
ANTIBIOTICS	112	4%	3%	$3.16	$1.05	$3.00
ENZYME	12	7%	4%	$3.05	$2.03	$1.50
ALCOHOL	6	4%	2%	$1.44	$2.40	$0.60
TRANQUILIZERS	72	3%	1%	$0.90	$0.75	$1.20
CHEMOBIOTIC	30	None	None	$0.46	$0.75	$0.61
LIVE RUMEN	3	3%	None	None	—	None

*Reported at the American Society of Animal Production Meeting, November, 1959. Results represent 32 different colleges.

Six years ago, Stilbosol was made available to cattle feeders fattening cattle for market. By using this new beef gain booster, cattlemen were promised an extra 15% daily gain on 10% less feed. How is this promise holding up? Take a good look at the chart. Notice the return per animal, return per dollar investment, extra gain, and feed savings. Note, too, that these are *averages* and include high-gaining, medium-gaining and low-gaining rations. If you feed a high-gaining ration, you can expect to better these average figures. *Thousands of cattlemen have. They continue to do so.*

Three years after its introduction, about three fourths of the cattle fed out for market in the United States were being fed fattening rations containing Stilbosol. Proof enough that Stilbosol paid off in the feedlot!

Today, cattlemen are still getting the same increased daily gains and the same feed savings per pound of gain. In the past six years, an estimated 40,160,000 head of Stilbosol-fed cattle have been slaughtered to feed our growing and beef-hungry nation.

Stilbosol is Elanco Products Company's trademark for diethylstilbestrol premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U.S. Patent No. 2751303.

After six years, Stilbosol (most thoroughly tested feed additive in the world) continues to give most feeders an extra 15% gain on 10% less feed.

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Makers of **HYGROMIX®** (*S. hygroscopicus* fermentation products) • Streptomycin Sulfate • Vitamin B_{12} • **MICRO-PEN®** (special coated procaine penicillin G)

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Shrinkage—A Survey in Georgia Feed Mills

The study concludes that total shrinkage is probably close to the 1% figure commonly used. However, "it may run as high as 3-4% with poor collectors and long storage periods."

By T. E. Stivers
T. E. Stivers Co.

Shrinkage in the feed industry is usually thought of as the difference in purchased weight of raw materials and selling weight of finished product.

Most of the total shrinkage is accountable, but some is not. These unaccountable shrinkages are often called "invisible losses." Our major losses come from the following:

Accountable: (1) moisture, (2) dust, (3) spillage and torn bags, (4) insect infestation, (5) overpack, and (6) theft.

Unaccountable: (1) respiration of grain, (2) errors in weights, and (3) inventory errors.

Because of the great effect of inventory errors, the total shrinkage for a given mill can usually only be determined by averaging a period of months or years.

These shrinkages result from various mill operations that might be classified as follows:

(1) Changing size or shape, such as grinding, crimping, cutting, pelleting (compression) and shelling.

(2) Handling, including receiving or loading, storage and shipping.

(3) Changing moisture intentionally, such as pelleting (steaming), tempering, drying.

Obviously the addition of moisture by steaming or tempering gives a weight gain that helps offset losses from other operations, but rarely can sufficient moisture be added to offset all losses.

Factors that affect the amount of shrinkage that occurs in the above operations are:

(1) Time (in handling, storage, transit, etc.).

(2) Air Conditions—(a) temperature, (b) humidity and (c) wind velocity.

(3) Type of handling. (Flat storage or bins, bulk or bag, box or bulk cars, open or sealed crib, etc.).

(4) Distance moved. (Normally a function of time).

(5) Nature of the material. (Natural moisture level when in equilibrium, particle size, etc.).

Since there was very little information in literature or files on actual experienced shrinkage in the Southeastern area mills, I solicited information by survey from member mills of the Georgia Feed Assn., plus some out of state mills. Two sheets were sent each mill, one to be filled out for bulk and one for sacked or bagged materials. The results are summarized in the tables.

From the brief and inconclusive information obtained, I make these observations: All comments, unless otherwise noted, apply to Georgia conditions, and are subject to verification or correction by actual research.

(1) **Very few mills** have analyzed or determined accurately their exact shrinkage, either total or for specific operations. Only one mill reported "actual" figures with substantial coverage, and these covered mostly total shrinkage.

(2) **Ear Corn:** The relative consistency of three mill reports, one on an actual basis, indicates the total average shrinkage runs between 12 and 15%. (Note that the mill reporting "actual" loss did not include shelling loss.)

These losses are assumed to include shelling, storage and handling in and out of storage on a portion of the ear corn, plus handling and loadout losses on the shelled corn and on the cob and shuck.

A large percentage of our southern corn is still bought "in the shuck" and much of the cob and shuck molassified as a roughage ingredient. It is understandable that losses here would be high and variable.

From talking with several millers who store from 50,000 to 100,000 bu. ear corn, they seem to think major losses come from, in order of importance: (1) moisture, (2) insects, (3) windblown shuck and dust and (4) errors in weights and inventory.

(3) **Shelled Corn:** The wide variation, from ¾% to 5%, is probably

(Turn to page 40)

T. E. Stivers

AUTHOR—T. E. Stivers operates a milling engineering firm, the T. E. Stivers Co., at Decatur, Ga., providing mill design and consulting services for the feed and grain milling industries. He is a graduate of the milling school at Kansas State University. He was with Quaker Oats Co., at Sherman, Texas, and Akron, Ohio, and with Sprout, Waldron & Co., before organizing his own company. The accompanying article is from a talk given by Mr. Stivers at the Georgia Feed Assn. convention.

TABLE 1. Shrinkage in Bulk Grain

	Mill Number 1 %	2 %	3 %	4 %	5 %	6 %	7 %	Average %
A. Ear Corn								
1. Receiving and storing	10.0	..	(8.0)	..	..	..	10.0	9.3
2. Transfer	..	..	(.5)	..	..	..	..	.5
3. Shelling	..	..	..	..	..	..	..	..
4. Grinding	5.0	..	(.75)	..	..	..	..	2.9
TOTAL	15.0	..	(9.25)	15.0	..	..	10.0	12.3
B. Shelled Corn								
1. Receiving and storing	5.0	.5	(4.0)	..	..	..	4.3	3.5
2. Transfer	..	..	(.25)	..	..	..	..	.3
3. Grinding	..	.5	(.5)	..	..	.75	..	.6
TOTAL	5.0	1.0	(4.75)	5.0	(.75)	.75	4.3	3.1
C. Oats								
1. Receiving and storing	5.0	..	..	..	..	..	..	5.0
2. Transfer	..	..	..	..	..	..	..	..
3. Grinding	..	..	..	..	..	2.0	..	2.0
TOTAL	5.0	..	..	10.0	(.72)	2.0	..	4.4

NOTES:
1. All parenthesized figures reported to be "actual" determinations. All others assumed to be estimates.
2. Total averages are taken across, not down.
3. All averages taken to nearest .1%.

TABLE 2. Shrinkage in Bulk Ingredients

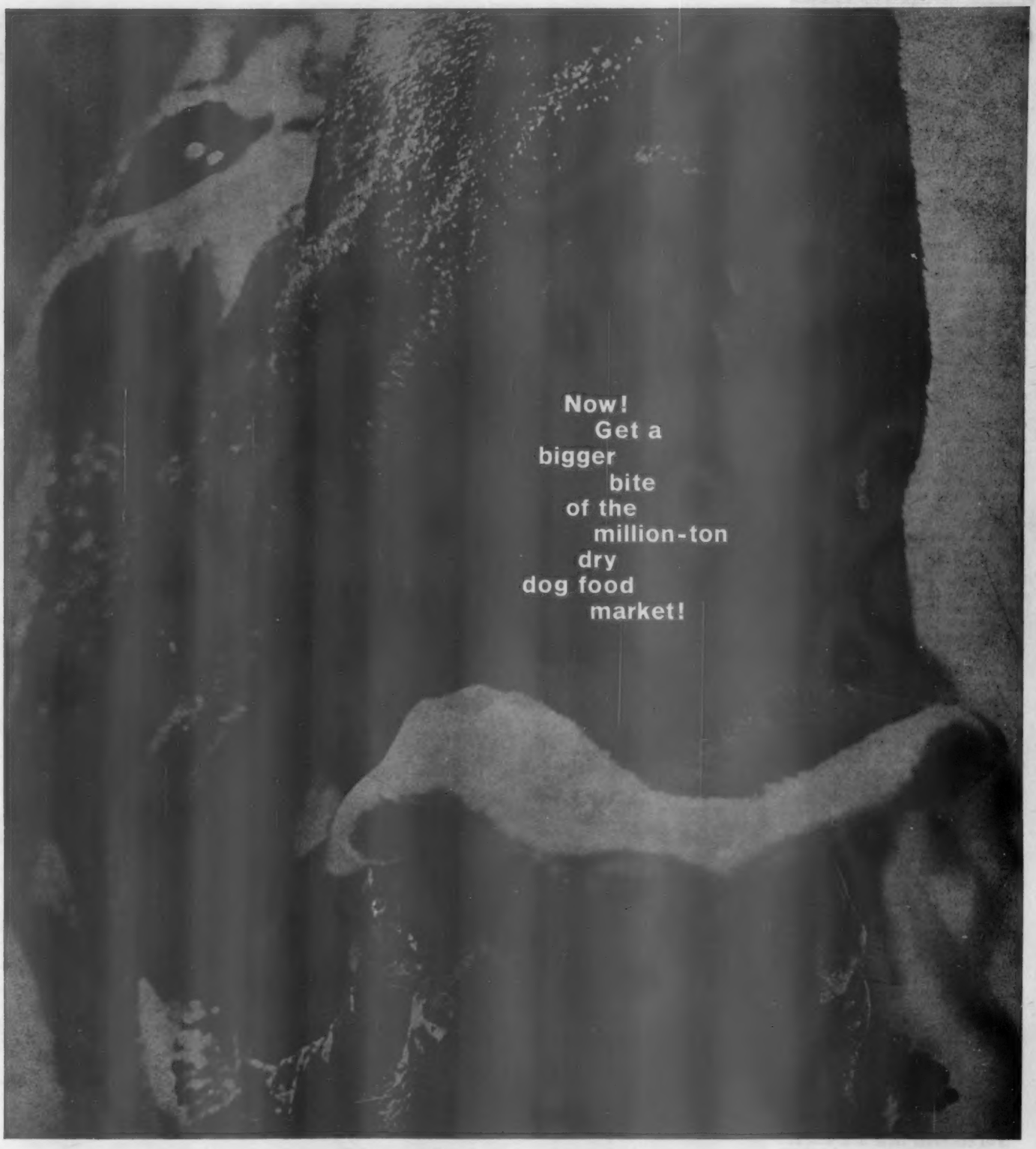
	Mill Number 1 %	2 %	3 %	4 %	5 %	6 %	7 %	Average %
A. Proteins								
1. Receiving and storing	..	..	..	..	..	..	..	..
2. Mixing and processing	..	..	..	..	..	1.50	..	1.5
TOTAL	..	..	..	..	.40	1.50	..	1.0
B. Alfalfa Meal								
TOTAL	..	..	..	..	.47	..	..	.5
C. Alfalfa Pellets								
TOTAL	..	..	..	..	..	1.0	..	1.0
D. Broiler Concentrate (40%)								
1. Receiving and storing	..	.25	..	..	..	..	..	.3
2. Mixing and processing	..	.50	..	..	..	..	..	.5
TOTAL	..	.75	..	..	..	..	..	.8
E. Average All Ingredients								
1. Receiving and storing	..	.25	..	..	..	..	..	.3
2. Mixing and processing	..	.50	..	..	..	..	..	.5
TOTAL	..	.75	..	..	.54	1.50	..	.9

NOTES:
1. All parenthesized figures reported to be "actual" determinations. All others assumed to be estimates.
2. Total averages are taken across, not down.
3. All averages taken to nearest .1%.

TABLE 3. Shrinkage in Bulk Finished Feed

	Mill Number 1 %	2 %	3 %	4 %	5 %	6 %	7 %	Average %
A. Mash—Poultry								
1. Storage	..	..	..	..	..	.25	..	.25
2. Rehandling	..	..	..	..	..	.25	..	.25
TOTAL	..	..	.23	.25	..	.50	..	.33
B. Mash—Hog								
1. Storage	..	..	..	..	..	..	..	..
2. Rehandling	..	..	..	..	..	..	..	..
TOTAL	..	..	.20	.25	..	..	..	.23
C. Mash—Dairy								
1. Storage	..	..	..	..	..	..	..	..
2. Rehandling	..	..	..	..	..	..	..	..
TOTAL	..	..	.35	.25	..	..	..	.30
D. Concentrates (Poultry 40%)								
1. Storage	..	..	..	..	..	..	..	..
2. Rehandling	..	..	..	..	..	.25	..	.25
TOTAL	..	..	.50	.25	..	.25	..	.33
E. Pellets—Poultry								
1. Storage	..	..	..	..	..	.25	..	.25
2. Rehandling	..	.25	..	..	..	.25	..	.25
TOTAL	..	.25	.20	..	..	.50	..	.32
F. Pellets—Hog								
1. Storage	..	..	..	..	..	..	..	..
2. Rehandling	..	..	..	..	..	..	..	..
TOTAL	..	..	.20	..	..	..	..	.20
G. Average—All Feeds								
1. Storage	..	.25	.28	.25	..	.25	..	.26
2. Rehandling	..	..	..	..	..	.25	..	.25
TOTAL	..	.25	.28	.25	1.0	.50	..	.45

NOTES:
1. All parenthesized figures reported to be "actual" determinations. All others assumed to be estimates.
2. Total averages are taken across, not down.
3. All averages taken to nearest .01%.
4. Storage: Includes transfer from receiving or manufacturing point, storage and loading out.
5. Rehandling: Includes transfer from one bin to another prior to loading.



Improve your products—and your profits—with these quality dog food supplements from Borden's

The dog population of the United States is on the rise. So is dog ownership. So, indeed, are your possibilities for profit. Reason? More dogs will obviously require more food. Yet, on the emotional level, more dog owners will require added assurances of quality. To this end, Borden's research and development has produced five remarkable supplements that can help you build a better food formula more economically—and get a bigger bite of this lucrative market.

BORDEN'S MG replaces dried whey on a pound-for-pound basis. Milk and Grain sources of whey factors...condensed whey solubles and fermented corn extractives, corn distillers dried solubles and dried whole whey in a dry free-flowing form. **BORDEN'S MRB replaces dried skim milk on a pound-per-pound basis.** Milk Replacer Base—high in protein and milk nutrients. Condensed whey solubles dried on soy flakes with added soy lecithin...flour like, free-flowing and easy to mix. Also available as HI-FAT MRB with 15% added choice white grease. **BORDEN'S CASEIN replaces high-cost horse meat or meat by-products.** A highly digestible protein of high biological value, comparable to protein in meat. The protein level is 86-88%—milk protein high in the amino acid lysine. **BORDEN'S CP#3 adds palatability and lasting taste appeal.** A standardized blend of cheese scrap dried on a free-flowing carrier. Easy to handle, inexpensive. **BORDEN'S PETPRO supplements cereal-base foods.** This all-in-one supplement contains whey, fermentation factor ingredients, liver and glandular meal, fish meal, fish solubles and all the essential microingredients, plus cheese powder for palatability.

Today's best dog foods are made with Borden's quality supplements.

And remember! Borden's Technical service is available at no charge to help you develop new formulas or improve old ones. Call or write us today for further information.

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HOW

Lemanco

CAN GIVE YOU

BULK STORAGE

QUICKLY

The revolution sweeping the country in the feeding industry is affecting feed mills all over the nation, both large and small. Many problems have arisen; among them the need for additional bulk storage, the need of saving labor, and the need to get more volume through the mill at lower cost per ton.

The square bins illustrated are some of the ways you can add extra storage in your plant. These bins are designed complete with rotary gates and supports for a weigh buggy operation. The minimum 60° slope built into most of these bins will handle practically all hard-to-flow materials. They are also available without legs, designed to set on your structural at any height. The No. 7682 or the No. 6682 can be mounted as bulk load-out bins either with a shed roof, or as an outside installation, since these hoppers can be made for either inside or outside use. Where one of the popular pneumatic units is being used, an air top is available. Outside weatherproof tops can also be supplied.

LEMANCO bins are prefabricated. The hoppers are constructed of 14-gauge steel, welded into a complete unit, the sides 16-gauge galvanized steel reinforced and gang punched in holding jigs to assure proper matching of all holes. This method of punching holes plus close control of tolerance in the fabrication of LEMANCO hoppers, legs and bracing, pays dividends in the ease of assembly by your own labor or favorite millwright.

LEMANCO storage bins are designed to enable you, the feed mixer or feed manufacturer, to install with small labor cost bins of proper pitch and suitable capacity. The use of common wall construction in grouping two or more hoppers together reduces labor and material costs.

You can save labor in operation by using LEMANCO bins with a LEMANCO weigh buggy or by filling a weigh hopper with an auger, thus getting ingredients into mixer in less time with less labor. You can, also, use these same type bins as finished feed storage, either mounted on structural as an overhead bulk load-out or, as many are doing, auger direct from the finished feed tank into the truck.

You can order these bins with full assurance that they are quality built and can be easily erected by you or your contractor. If in measuring your space you find the particular bin you need is too high, the sides can be adjusted on special order to fit your requirements. Where augers are attached, the bins can be lowered allowing you to add additional height for greater capacity.

The LEMANCO system is so flexible in application that it is impossible to detail every possibility. If you have difficulty in fitting one of these bin arrangements in your mill space or storage area, a phone call to our engineering department may assist you.

Write or telephone today for price list. Shipment can be made promptly.

LEACH MANUFACTURING COMPANY

P.O. BOX 1010 PHONE Liberty 7-5472

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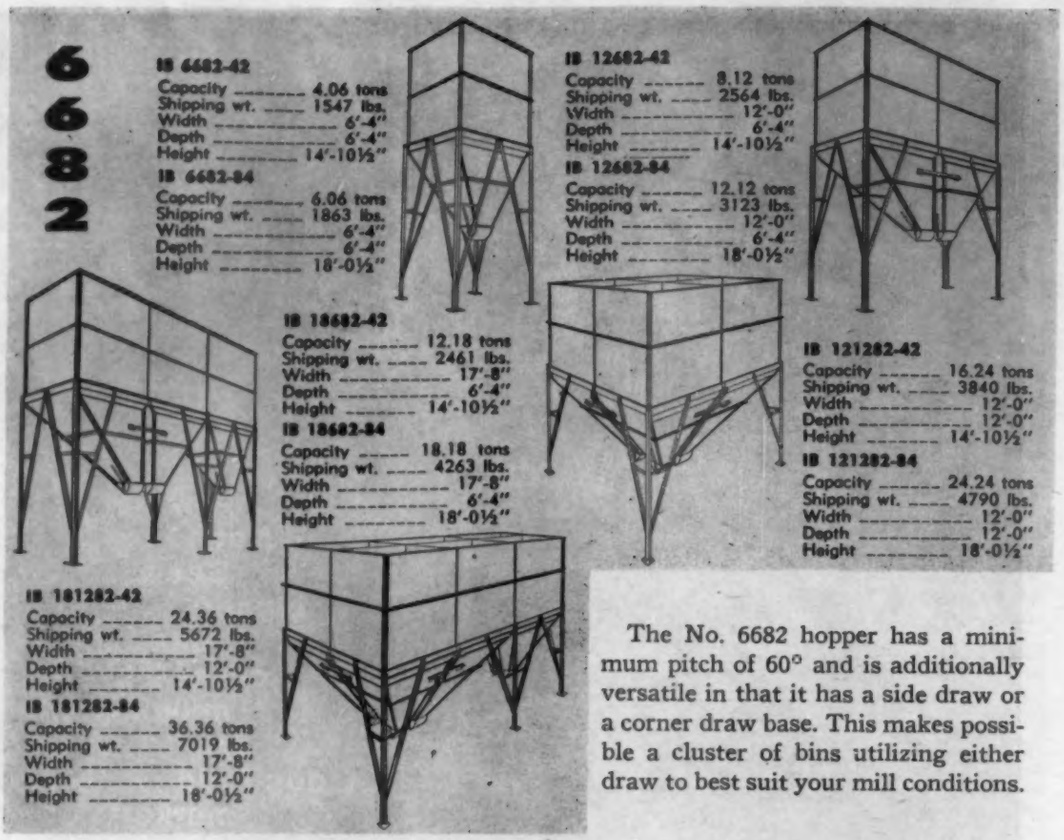


IB 6682-42
Capacity ..... 4.06 tons
Shipping wt. ..... 1547 lbs.
Width ..... 6'-4"
Depth ..... 6'-4"
Height ..... 14'-10½"

IB 6682-84
Capacity ..... 6.06 tons
Shipping wt. ..... 1863 lbs.
Width ..... 6'-4"
Depth ..... 6'-4"
Height ..... 18'-0½"

IB 12682-42
Capacity ..... 8.12 tons
Shipping wt. ..... 2564 lbs.
Width ..... 12'-0"
Depth ..... 6'-4"
Height ..... 14'-10½"

IB 12682-84
Capacity ..... 12.12 tons
Shipping wt. ..... 3123 lbs.
Width ..... 12'-0"
Depth ..... 6'-4"
Height ..... 18'-0½"

IB 18682-42
Capacity ..... 12.18 tons
Shipping wt. ..... 2461 lbs.
Width ..... 17'-8"
Depth ..... 6'-4"
Height ..... 14'-10½"

IB 18682-84
Capacity ..... 18.18 tons
Shipping wt. ..... 4263 lbs.
Width ..... 17'-8"
Depth ..... 6'-4"
Height ..... 18'-0½"

IB 121282-42
Capacity ..... 16.24 tons
Shipping wt. ..... 3840 lbs.
Width ..... 12'-0"
Depth ..... 12'-0"
Height ..... 14'-10½"

IB 121282-84
Capacity ..... 24.24 tons
Shipping wt. ..... 4790 lbs.
Width ..... 12'-0"
Depth ..... 12'-0"
Height ..... 18'-0½"

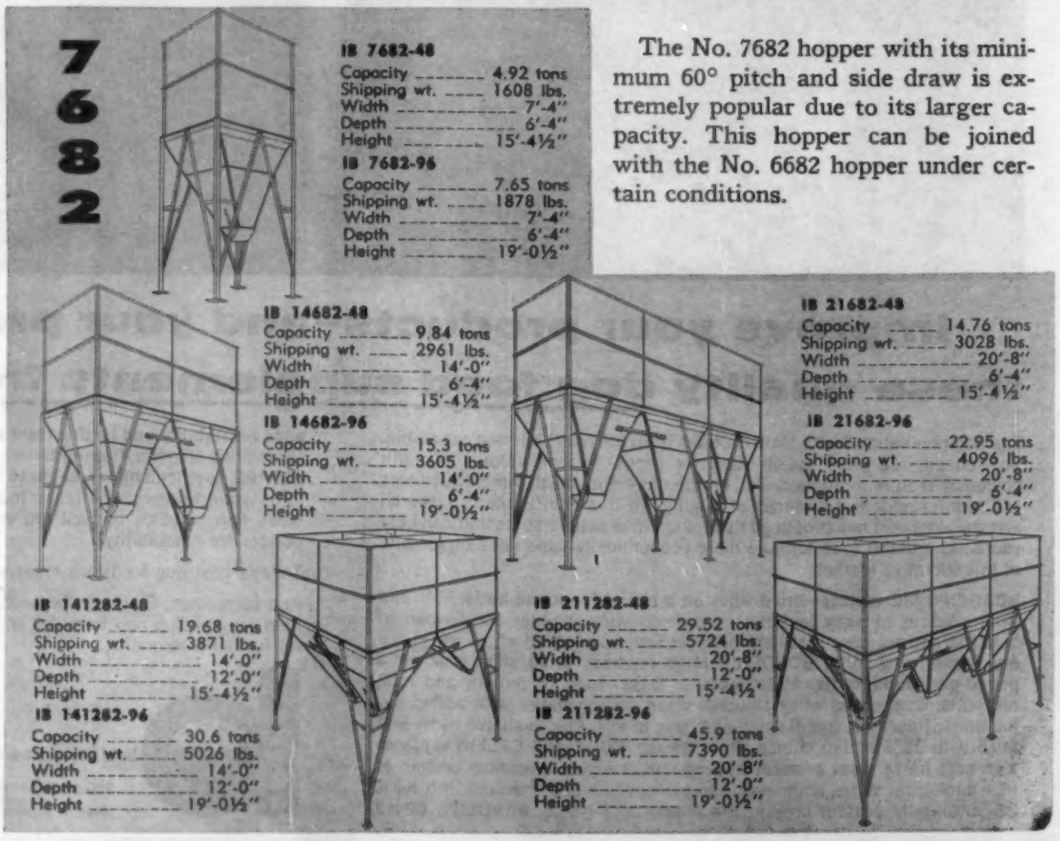
IB 181282-42
Capacity ..... 24.36 tons
Shipping wt. ..... 5672 lbs.
Width ..... 17'-8"
Depth ..... 12'-0"
Height ..... 14'-10½"

IB 181282-84
Capacity ..... 36.36 tons
Shipping wt. ..... 7019 lbs.
Width ..... 17'-8"
Depth ..... 12'-0"
Height ..... 18'-0½"

The No. 6682 hopper has a minimum pitch of 60° and is additionally versatile in that it has a side draw or a corner draw base. This makes possible a cluster of bins utilizing either draw to best suit your mill conditions.

ADD BULK STORAGE TO YOUR FEED MILL WITH Lemanco QUALITY PREFABRICATED STEEL BINS

7682



IB 7682-48
Capacity ..... 4.92 tons
Shipping wt. ..... 1608 lbs.
Width ..... 7'-4"
Depth ..... 6'-4"
Height ..... 15'-4½"

IB 7682-96
Capacity ..... 7.65 tons
Shipping wt. ..... 1878 lbs.
Width ..... 7'-4"
Depth ..... 6'-4"
Height ..... 19'-0½"

IB 14682-48
Capacity ..... 9.84 tons
Shipping wt. ..... 2961 lbs.
Width ..... 14'-0"
Depth ..... 6'-4"
Height ..... 15'-4½"

IB 14682-96
Capacity ..... 15.3 tons
Shipping wt. ..... 3605 lbs.
Width ..... 14'-0"
Depth ..... 6'-4"
Height ..... 19'-0½"

IB 21682-48
Capacity ..... 14.76 tons
Shipping wt. ..... 3028 lbs.
Width ..... 20'-8"
Depth ..... 6'-4"
Height ..... 15'-4½"

IB 21682-96
Capacity ..... 22.95 tons
Shipping wt. ..... 4096 lbs.
Width ..... 20'-8"
Depth ..... 6'-4"
Height ..... 19'-0½"

IB 141282-48
Capacity ..... 19.68 tons
Shipping wt. ..... 3871 lbs.
Width ..... 14'-0"
Depth ..... 12'-0"
Height ..... 15'-4½"

IB 141282-96
Capacity ..... 30.6 tons
Shipping wt. ..... 5026 lbs.
Width ..... 14'-0"
Depth ..... 12'-0"
Height ..... 19'-0½"

IB 211282-48
Capacity ..... 29.52 tons
Shipping wt. ..... 5724 lbs.
Width ..... 20'-8"
Depth ..... 12'-0"
Height ..... 15'-4½"

IB 211282-96
Capacity ..... 45.9 tons
Shipping wt. ..... 7390 lbs.
Width ..... 20'-8"
Depth ..... 12'-0"
Height ..... 19'-0½"

The No. 7682 hopper with its minimum 60° pitch and side draw is extremely popular due to its larger capacity. This hopper can be joined with the No. 6682 hopper under certain conditions.

The rotary gate design is very popular when weigh buggies are used since it is easy to dribble feed with this gate. Rack and pinion gates are also available for any of these bins.

•

* The bin height shown on both pages includes 42-inch clearance under rotary gate.

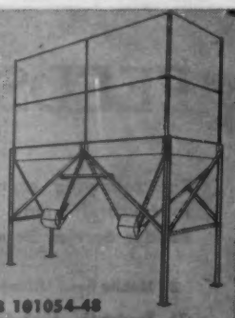
5554

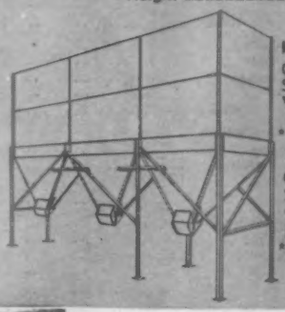
IB 5554-48
Capacity ..... 3⅜ tons
Shipping wt. ..... 1060 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 12'-10"

IB 5554-96
Capacity ..... 5 tons
Shipping wt. ..... 1200 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 16'-6"

IB 10554-48
Capacity ..... 6¾ tons
Shipping wt. ..... 1850 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 12'-10"

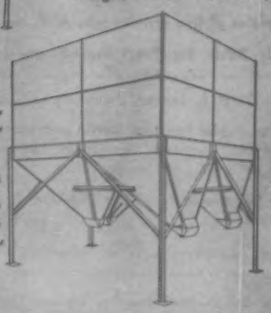
IB 10554-96
Capacity ..... 10 tons
Shipping wt. ..... 2000 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 16'-6"





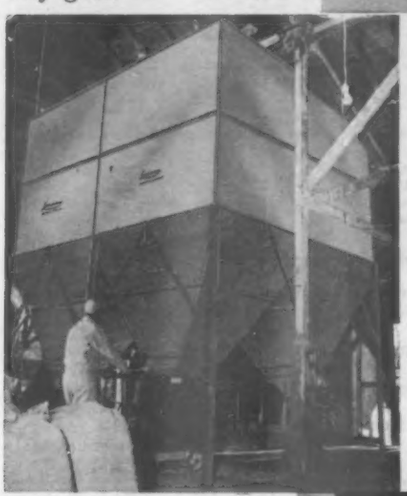
IB 15554-48
Capacity ..... 10 tons
Shipping wt. ..... 2300 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 12'-10"

IB 15554-96
Capacity ..... 15 tons
Shipping wt. ..... 2800 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 16'-6"



IB 101054-48
Capacity ..... 13½ tons
Shipping wt. ..... 2800 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 12'-10"

IB 101054-96
Capacity ..... 20 tons
Shipping wt. ..... 3200 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 16'-6"



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The various LEMANCO bin sizes make it possible to fit additional bulk storage into your mill quickly, easily, and economically, using less floor space.

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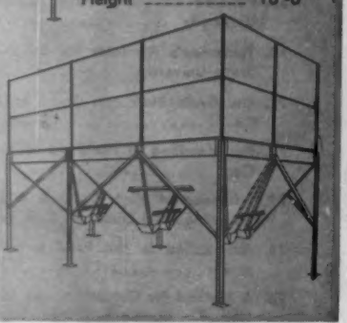
IB 151054-48
Capacity ..... 20¼ tons
Shipping wt. ..... 3750 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 12'-10"

IB 151054-96
Capacity ..... 30 tons
Shipping wt. ..... 4400 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 16'-6"



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The No. 5554 hopper has a minimum pitch of 45° in the back. The other three sides are 60° or more. As the gate on this bin is manually operated, bridging is a minor problem. Hoppers are all side draw.

The No. 5564 hopper is available as either a side or corner draw hopper. It has a minimum pitch of 60° on two sides and the other two are practically vertical. This hopper can be incorporated in a cluster with the No. 5554 where it is advantageous to do so, keeping in mind that the No. 5564 hopper is approximately 10" lower than the No. 5554. The 60° pitch and the corner draw practically insure flow of any type ingredient.

•

The LEMANCO weigh buggy comes in two sizes: Model 890, capacity 890 lbs. @ 40 lbs. per cubic foot and Model 1280, capacity 1280 lbs. @ 40 lbs. per cubic foot. The scale capacity on each is 1300 lbs. The low scale post permits the LEMANCO weigh buggy to be pushed under a cluster of bins to the second or third row of hoppers.

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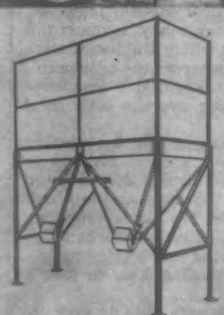
5564

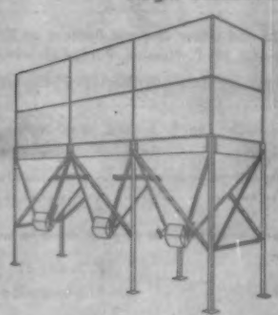
IB 5564-48
Capacity ..... 3⅜ tons
Shipping wt. ..... 1100 lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 5564-96
Capacity ..... 5 tons
Shipping wt. ..... 1250lbs.
Width ..... 5'-3"
Depth ..... 5'-3"
*Height ..... 17'-4"



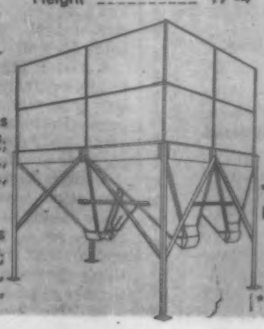
IB 10564-48
Capacity ..... 6¾ tons
Shipping wt. ..... 1950 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 10564-96
Capacity ..... 10 tons
Shipping wt. ..... 2100 lbs.
Width ..... 10'-0"
Depth ..... 5'-3"
*Height ..... 17'-4"



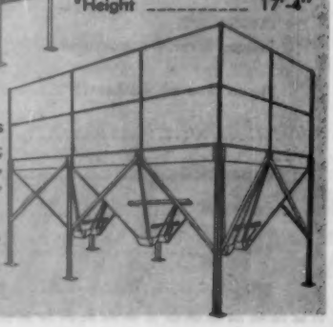
IB 15564-48
Capacity ..... 10 tons
Shipping wt. ..... 2300 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 13'-8"

IB 15564-96
Capacity ..... 15 tons
Shipping wt. ..... 2800 lbs.
Width ..... 14'-9"
Depth ..... 5'-3"
*Height ..... 17'-4"



IB 101064-48
Capacity ..... 13½ tons
Shipping wt. ..... 3200 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 13'-8"

IB 101064-96
Capacity ..... 20 tons
Shipping wt. ..... 3400 lbs.
Width ..... 10'-0"
Depth ..... 10'-0"
*Height ..... 17'-4"



IB 151064-48
Capacity ..... 20¼ tons
Shipping wt. ..... 3950 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 13'-8"

IB 151064-96
Capacity ..... 30 tons
Shipping wt. ..... 4600 lbs.
Width ..... 14'-9"
Depth ..... 10'-0"
*Height ..... 17'-4"

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TABLE 4. Shrinkage in Bagged Finished Feed

	Mill Number 1 %	2 %	3 %	4 %	5 %	6 %	7 %	Average %
A. Mash—Poultry								
1. Storage	..	.10	..	..	..	.25	..	.18
2. Rehandling	..	..	..	..	..	.25	..	.25
TOTAL	..	.10	(.48)	.38	..	.50	..	.37
B. Mash—Hog								
1. Storage	..	..	..	..	..	..	..	..
2. Rehandling	..	..	..	..	..	..	..	..
TOTAL	..	..	(.45)	.38	..	..	..	.42
C. Mash—Dairy								
1. Storage	..	..	..	..	..	..	..	..
2. Rehandling	..	..	..	..	..	..	..	..
TOTAL	..	..	(.50)	.38	..	..	..	.44
D. Mash—Concentrate								
1. Storage	..	..	..	..	..	.15	..	.15
2. Rehandling	..	..	..	..	..	..	..	..
TOTAL	..	..	(.50)	..	..	.15	..	.33
E. Pellets—Poultry								
1. Storage	..	..	..	..	..	.25	..	.25
2. Rehandling	..	..	..	..	..	.25	..	.25
TOTAL	..	..	(.45)	..	..	.50	..	.48
F. All Feeds—Average								
1. Storage	..	.10	..	..	..	..	..	.10
2. Rehandling	..	..	..	..	..	..	..	..
TOTAL	..	.10	(.47)	.38	..	.38	..	.33

NOTES:
1. All parenthesized figures reported to be "actual" determinations. All others assumed to be estimates.
2. Total averages are taken across, not down.
3. All averages taken to nearest .01%.
4. Storage: Includes transfer from receiving or manufacturing point, storage and loading out.
5. It was not indicated whether rehandling included pouring up and resacking, or only rehandling in warehouse in bags.

due primarily to difference in storage time, initial moisture, and methods of handling.

On the average, it would appear that if a mill purchases shelled corn on truck weights, and passes it through storage and processing in a week or less, the loss might be from ¾% to 1%.

If they receive it from their own sheller, or store for three to six months, turning it several times or drying it before grinding, then the loss can go up to the 5% range.

The single "actual" reported loss per transfer, of ¼%, seems reasonable, and compares closely with transfer losses on feed and pellets. This is a good thing to keep in mind when figuring the cost of moving grain several times prior to processing or sale.

The average grinding loss of about ½% also seems reasonable. This is probably mainly dust collector loss and moisture loss. I might point out here that several years ago a flour mill engineer determined that on the average the loss was 6% on all dust stocks that passed through a cyclone collector. We don't expect this loss in a hammermill collector today because of two things—improved design and application of proper sized collectors and, secondly, our corn and oats are not ground nearly so fine as flour mill dust stocks. However, I have observed many hammermill dust collectors where the losses were well over 1%, whereas the proper collector system should not lose over .2% dust on our average corn meal grind.

We note that mill No. 6, reporting "actual" figures, showed no loss in receiving and storing, then showed the total loss the same as the grinding loss, at ¾%. We can assume they might actually have a ¼% handling loss just receiving into a grinding bin, plus a ½% grinding loss, to give a total of ¾%.

4. Oats: The oats data is very inconclusive, ranging from ¾% to 10%, but generally averaging higher than corn. Perhaps more data on oats could be furnished by some of the elevator people in the area.

5. Bulk Ingredients: Very little information was reported on any of these items, and no figures were "actual." As a rough guide, it would appear that the three reporting mills think they are averaging about 0.9% shrinkage on all ingredients.

Mill No. 2 report may be of interest because of its apparent special nature as a broiler concentrate mixer. The mill estimated a loss of ¼% receiving and storage, plus ½% mixing and processing, total of ¾%. They also reported (in Table 1) a total of 1% shrinkage in shelled corn. On the basis of a 60% corn-40% concentrate mix, this gives an average total shrinkage of about .9% for their whole operation.

6. Bulk Finished Feed: The average of all feeds at .45% may be misleading.

First, we note that except for the high figure of 1% estimated by mill No. 5, the other four reporting mills averaged .26% loss for storage only. Mill No. 6 had an added ¼% loss for rehandling, bringing their total losses to ½%.

Secondly, the average of all the individual items reported (not the total average reported in item E by the mills) is approximately .3% shrinkage.

It would appear then that a loss figure of ¼% to ½% would be a more probable average range for typical storage and handling conditions on all types of finished feed.

7. Mash versus Pellets: It appears that mash and pelleted feeds are thought to have about the same losses, although reports are considered inconclusive.

8. Mash Type Differences: All mashes, including poultry, hog, and

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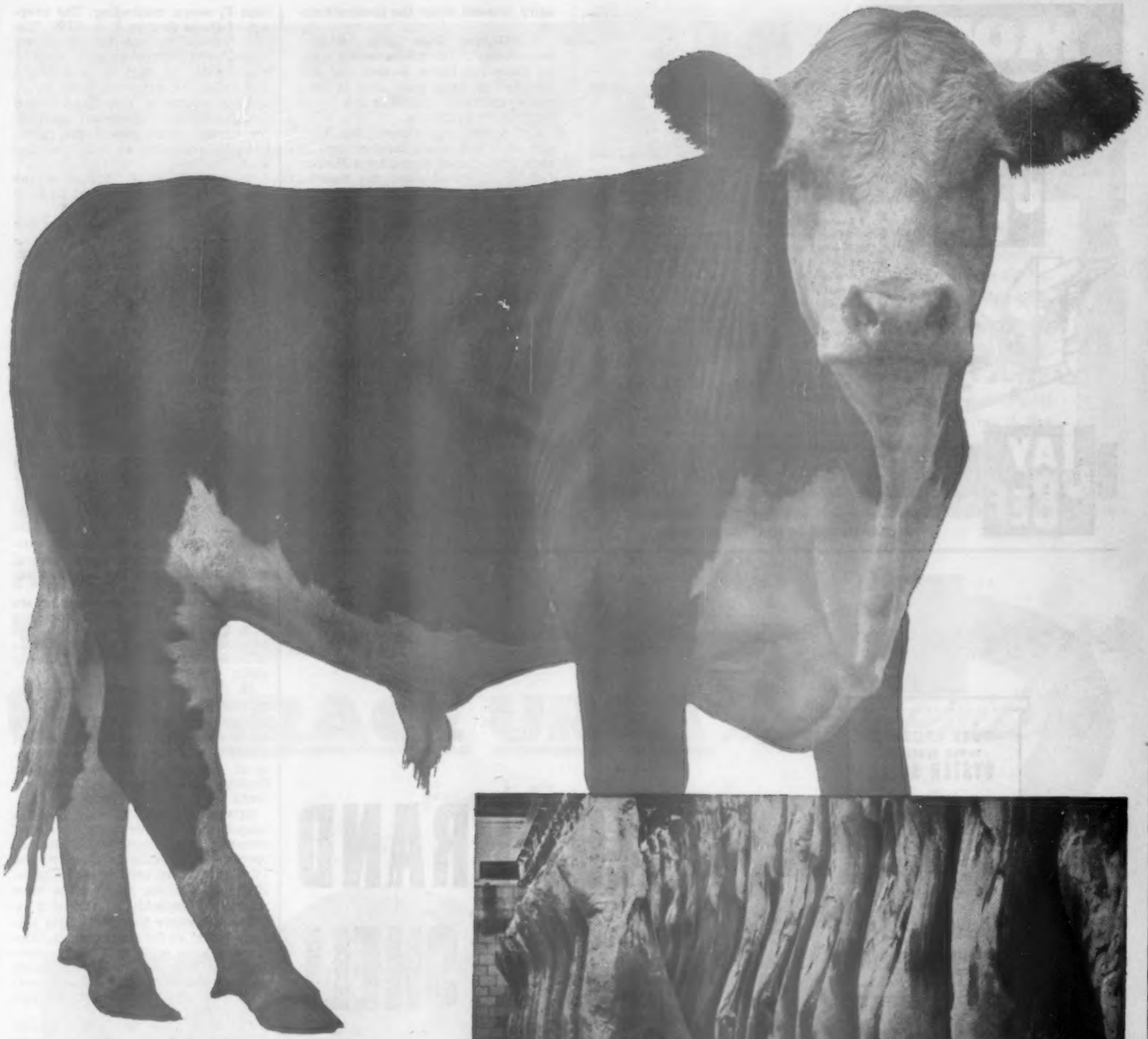

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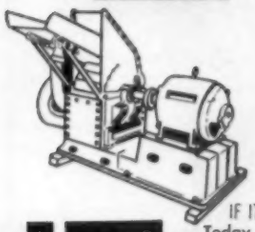

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dairy, showed about the same shrinkage.

9. "Bagged Grain" and "Bagged Ingredients": No tables were made for these two items, as only one mill reported in each case, and in both cases indicated their figures were very rough estimates.

One verbal report was given by a mill that had check weighed two 20 sack lots of corn stored by a farmer. Lot No. 1, stored about five months, from December to May, lost 85 lb., or about 4.3%. Original moisture was estimated to be 15%, and final moisture 12 to 12½%, or a moisture loss of 2½ to 3%. Some insect damage was observed, and presumably the other 1.3 to 1.8% loss was due to this and dust loss in handling.

Lot No. 2 was stored seven months, from December to July. Only one bag was weighed, at 92 lb., in July. Original weight was 100 lb. on all bags, giving a loss of 8% on this bag. Original moisture was estimated at 15%, final at 11%. The mill manager did not believe all bags were as low as 92 lb., but there was considerably more insect damage due to two months more storage in hot months. He estimated the loss to average about 6% on Lot No. 2.

10. Bagged Finished Feed: Again the average of ⅓% for all feeds, in item F, seems misleading. The average of items A thru E is .41%. The only "actual" figures, mill No. 3, averaged .47%. The average is lowered considerably in item F by a single .1% estimated figure for mill No. 2, and a low figure of .15% by mill No. 6 on concentrate. If these are omitted, the average would exceed .4%, calculated by averaging all individual figures.

Therefore, we might assume the average shrinkage in bagged feed for typical conditions is about .4%.

11. Pellets versus Mash: Only one "actual" figure was reported on pellets, at .45%. Comparing this with the average mash shrinkage of .48% reported by the same mill, the losses seem to be the same for all practical purposes.

12. Bagged versus Bulk: The average assumed loss of .3% for bulk finished feed is about .1% lower than the .4% bagged feed shrinkage. Further, mill No. 3 reported an average of .28% on all bulk feeds against an average of .47% on all bagged feeds, or about .2% lower loss on bulk.

From this we would conclude a .1% to .2% more shrinkage in bagged feed under the average conditions in reporting mills.

13. One mill has reported an actual survey of shrinkage in shipping bulk feed to several bulk stations at various distances ranging up to several hundred miles from the mill. The average total shrinkage was ⅓%.

14. Another mill checking a six months period of shipments from mill to bulk stations by hopper cars has concluded that the shrinkage was definitely less than 1%, and probably about ⅓%.

15. One mill reported losses of up to 4 to 5% on receiving, storing and mixing bulk sun-cured alfalfa. The losses on this fine particle ingredient are of course increased by wind losses at the box car or pit, also dust through the elevator legs and bin vents.

SUMMARY—(1) It may be concluded that in our area the total shrinkage on commercial feed mill operations is probably close to the 1% figure being used by most mills. However, I think many mills have much less, probably nearer to .6 or .7% total, where they have tight systems and store for short periods. Conversely, some mills with poor collectors and long storage periods, with several rehandlings, are probably running well over 1%, possibly as high as 3 or 4%.

(2) Each type mill has a totally different shrinkage picture. While losses in any given process, such as handling or storage, may be averaged, they are affected so much by conditions and equipment that averages are only rough guides at best. Each mill should make its own tests of each unit operation. By using unit shrinkage values and their long range total shrinkage figures, they can probably arrive at a basis for determining their shrinkage for any given product or sequence of operations.

(3) The idea might be worth investigating of having an independent research agency survey and summarize available data on shrinkage from United States mills. Then, if the data is still inconclusive, possibly a national group such as the American Feed Manufacturers Assn., Feed Production School, or U.S. Department of Agriculture could undertake a research program to get more specific information useful to all U.S. mills. This probably would have to be conducted and reported by areas to be of material help. How much dollar value this program would have to the industry, I do not know, but it would certainly be a step toward better control of our operations.

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Mill Operator Needs Profits From Related Lines, Activities

"Rising labor and other costs have lowered the margin in a custom mill and the owner has to add related lines and activities."

By Al P. Nelson
Feedstuffs Special Writer

"Ten years ago a feed man with a good custom mill operation could make a satisfactory profit from that service," a mill operator told me recently. "He didn't need any sidelines or related lines, but today he's got to have them. Rising labor and other costs have lowered the profit margin in a custom mill, and the owner has to add related lines to warrant his big investment."

This same opinion was given me by many a custom mill owner in the middle west on recent trips covering eight states. The continued prevalence of this complaint from different states, reflects the fast-changing pattern of the feed business. Bigger investments, higher labor and other costs, shrinking margins, require a larger volume of business. There is little tolerance in such a business schedule of seasonal dropoffs in volume. The modern custom mill owner, say many, needs to have a year around program which provides for bridging former seasonal slump periods with new merchandising activities resulting in profitable sales.

Take the case of a modern push-button custom mill operated by one man. With such a setup there is a bulk truck and a driver, a bookkeeper and often another mill employee to help serve the bag trade and watch the farm supply store. On days when no custom mix orders come in until 10 or 11 a.m. the mill man and the bulk truck driver have little to do. But their wage rates are high.

The large investment in a modern mill, the high labor cost, etc., all require that to keep up a profit rate the equipment and the men should be kept operating and working most of the eight hour day. Idle time builds a volume handicap hard to overcome.

Some custom mill operators in a situation like this do either of the following things or sometimes both:

1. Find productive jobs for employees at all times.

2. Hire an outside salesman and have him beat the bushes for additional business. This is accompanied by a larger and more consistent advertising program.

Ten to fifteen years ago the average custom mill could weather the regular seasonal slump in volume or even the daily slump of two to three hours of shut-off machinery. Labor costs were much lower — so were other costs. Profits went a long way.

But today, as pointed out, costs are much higher and investments are bigger. The entire custom mill operation —the machinery and the employees— must be productive most of the working day in order to compete successfully today.

How are some feed custom mills, or area feed manufacturers meeting this high operation cost?

They are doing it in a number of ways:

1. Contract poultry production. In an attempt to keep up their volume, many large custom mills and area feed manufacturers enter into contracts with broiler and turkey raisers and owners of laying flocks. Such mills assume calculated risks with a guarantee of labor and market prices. In return they know how much feed raisers under contract will want every month. Plans can then be made to produce this amount of feed, under terms favorable to the mill. Through planning, mill machinery can get into production at 7 a.m. every day and keep going on volume orders as long as those orders last. The rest of the day can be filled with brand feed production to fill quotas. Some regional mills have special custom mix departments, too, to handle grinding and mixing of non contract customers.

With these firms there is no daily search for enough business to keep equipment busy. The equipment can begin producing contract feed volume early in the day.

In other words, the contract feeding method "ties up" a certain large tonnage of feed business for the parent mill and simplifies production problems—though at some additional financial risk.

2. Grain bank plans. There has been a decided increase in grain bank storage plans, particularly through the east and middle west grain areas in the past five years. Here again, the grain bank idea enables the feed firm to get "committed" grind and mix volume over a period of from one to six months or more. The farmer who stores grain under this plan will use all or most of it in his grind and mix operations and he will patronize the mill where his grain is stored.

So great is the interest in grain bank operations that numerous country bankers have been willing guests of feed men on grain bank storage tours. Many feed men seek bank loans to erect adequate grain bank storage space so they can compete in the keen struggle today for grind and mix business and the related sales which go with it.

It is not the purpose of this article to go into the various methods of setting up a grain bank program. Many feed dealers issue bulletins or folders outlining their plans in detail for farmers. It is also a well known fact that mobile mill operators, who have shown enterprising ingenuity in going after business in the last five years, are scratching their heads, in many instances, over what to do to combat the lure of the grain bank plan.

One mobile mill operator said, "We've got two things to fear in this otherwise profitable business. One is the grain bank plan. The other is bulk feed production, storage and sale. I think I'm going to have to get into bulk in a big way on storage."

3. Sideline. When the volume of

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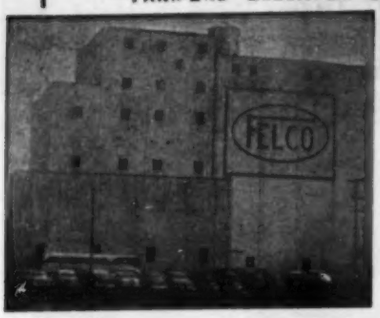

This all-concrete FELCO push-button feed mill and warehouse at Fort Dodge, Iowa, is managed by Morel Stiemtjes. The mill features individual scales for each ingredient, conveying equipment direct from packers to truck loading dock or warehouse storage. Bulk carload or truck unloading and bulk finished product loading facilities are included. Let us put our experience in design and construction at your disposal.

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grind and mix business in a two-man custom mill (including bulk driver) runs below five hours a day, that owner is not getting much dollar production out of his employees. In fact, in the face of present labor costs, he may be losing money.

Therefore, one big problem many custom mill owners have to face is to keep employees busy in a productive way eight hours a day. And this means a steady flow of profitable business.

Murray Renick of Rolla Feed Mill, Rolla, Mo., has solved this problem by setting up a dog food plant near his custom mill. He interchanges employees on custom mill work and producing dog food. Under the present arrangement all his employees are kept busy practically every day full time between the two divisions. Verona Feed Mill, Verona, Va., operated by Earl Shackleford, also provides a steady work program for employees through the making of a line of dog food which is marketed regionally.

4. Feeding operations. At Wayne, Wis., Glenn Milling Co. has two employees in the custom mill. But these two men handle a large volume of custom mix orders, deliver the feed and also take care of over 100,000 company-owned broilers housed nearby. Thus the labor cost load is spread over a greater volume.

The Miller brothers, dealers at Oakland, Ill., who operate a hog motel, are assured of a large predictable sale of feed monthly at their custom mill, because they feed over 800 pigs for farmers in the area. The pigs are housed near the feed mill, and mill personnel handles the custom mixing, and also takes care of the hogs, with the help of considerable equipment. Here again, the labor cost load is spread thin.

At Fashion Farms, Meservey, Ia., Carroll Morris, owner, also operates a feed mill. Here again mill personnel handle many duties in and about the cow pool during spare time.

Hoke Bair Co., Hanover, Pa., has a custom mill, and in addition has a laying flock of 10,000 hens a mile from town. This flock is fed by the mill production, and some of the personnel help out with flock handling on occasion. Local restaurants, hotels and stores are buying quality eggs from this egg farm.

Marketing Plans

5. Egg marketing plans. The organization of egg marketing plans by custom mill men usually involves the production of feed by the custom miller for people in the egg marketing plan. This again is assured production of a type, enabling the custom mill owner to plan his operations carefully. Bud Hoglund of Kasson Elevator Co., Kasson, Minn., organized such an egg plan to help his customers and to provide more business for his custom mill.

Harold Peck, Peck Feed & Grain, Spring Green, Wis., erected a new custom mill a year ago to help him serve 30 producers in an egg marketing plan in the area. He custom mixes special rations for these egg producers and delivers the feed to them if they wish. Mr. Peck is also an egg producer and raises many broilers, too. He operates a one-man custom mill and also has a delivery man. These men are kept very busy in Peck's ambitious production schedule.

Lakeview Hatchery, Clear Lake, S.D., is erecting a new store and mill and bulk station to supply egg producers in a sizable egg marketing program in that region. Such a plan secures a regular feed volume of some size.

6. Other activities. Martin Bros., Roanoke, Ill., has a $225,000 pellet mill which produces about 60 tons of feed daily for the firm's own 2,000 cattle herd and herds of other cattlemen in the area. The firm also has a John Deere dealership and a bulk fertilizer blending station. These related activities keep an employee force of from 8 to 10 persons busy most months of the year and spread the labor cost.

Patterson & Guthrie Co., Harrodsburg, Ky., has a large and profitable custom mill. The firm also owns a large farm with a seed cleaning plant. These two plants enable the firm to utilize labor quite effectively most months of the year.

There is very little unproductive labor at the St. Ansgar (Iowa) Mill. In addition to a new, profitable custom mill, this firm also has a sizable oat processing department. Processed oats are sold to many feed mills in this part of the country and enables the feed firm to keep its employees working productively all year long.

Another firm with a sizable processed oats production is the Farmers Elevator Co., Storm Lake, Ia. Night production on oats rolling is often needed in order to fill the demand, reports the management.

Operating livestock sales barns is another method by which some feed men increase their patronage and volume. Mac's Feeder Service, Belmond,

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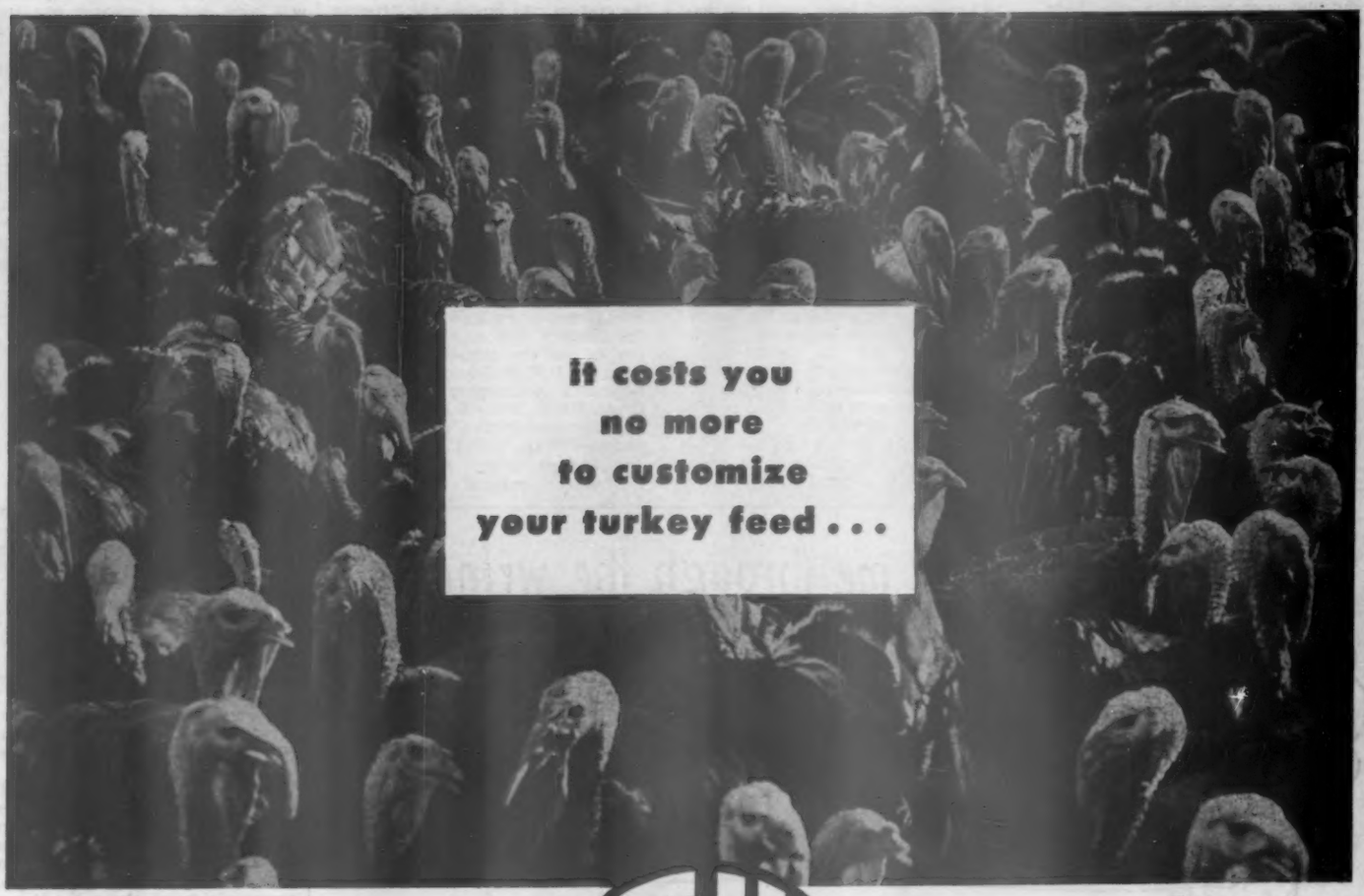

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Iowa, has a thriving feed business and also operates such a sales barn. The firm has no custom mill, but does have a mobile mill, and also raises and sells feeder pigs.

Glenny Bros., Quaker Oats dealer at Rockford, Ill., raises several thousand pigs per year, thus utilizing grain grown on the firm's farm. The firm also imports Missouri born feeder pigs and sells them to farmers in the area.

7. Farm Supply Stores. In the attempt to get greater volume, to provide more full-time work for employees, many custom millers and mobile mill operators are establishing farm supply stores. Many farm supply items carry margins up to 40% and higher, and sale of such items brings a considerable profit. Such stores, too, give the owner an opportunity to get a higher per employee dollar sales total. Stores like this, too, help to smooth out any former seasonal slump periods.

"By having extra work for my two-man staff to do," says one custom mill operator, "I have raised the dollar sales volume of two men to $65,000 each. This is considerably above the industry average, and I am not working these men to death. I am merely providing them with regular work to do." This miller is raising some broilers of his own and is involved in an egg marketing plan.

"A custom miller, as a rule, cannot control 100% the flow of grind and mix orders into his mill," says this feed man. "Even with a grain bank plan, you may find yourself running out of productive work for your employees to do along in mid-afternoon. If you have extra duties for them—productive duties — you will lower your labor cost. No custom miller should think that he can allocate 100% of his labor cost to grind and mix operations today and compete in the present market. He's got to find some added way in which to use his labor more effectively or he must find a way to increase his sales profitably. Or he can do both. That's why the custom mill business is different today from what it was 15 years ago."

Ohio Poultry Event Slated Sept. 28-29

COLUMBUS, OHIO—Ohio poultrymen can expect some verbal fireworks at the 13th annual Ohio Poultry Industries Conference and Exposition scheduled for Sept. 28-29 at the Ohio State Fairgrounds, according to officials.

Monroe Babcock, Ithaca, N.Y., poultryman and a leader in the poultry industry, will speak at the conference on the subject, "It's Time You and I Made Some Money." Mr. Babcock's philosophy, reports Dr. Glyde Marsh, Ohio State University extension poultryman, is built on this premise: "Expand and succeed; stand still and go broke." Many poultrymen do not support this idea, Mr. Marsh says. They claim expansion will only lead to greater egg surpluses. Mr. Babcock will speak at the Sept. 29 morning session.

The two-day program to be held in the Youth Center is expected to attract egg, broiler and turkey producers from throughout Ohio. The first day's program will be devoted to latest developments in turkey production. The second day's program will feature talks and discussions on the future of the poultry industry. Dr. Harry Love, Virginia Polytechnic Institute, will chart future opportunities in the industry.

One of the speakers on the first day's program will be John W. Hough, Ill., Morris, Ill., editor of Turkey World.

Fish Hatchery Feeds Linked to Outbreak Of Cancer in Trout

DENVER—Commercial fish hatchery feeds were linked to an outbreak of cancer in trout during discussions at the 90th annual meeting of the American Fisheries Society here at the Denver-Hilton.

While acknowleding that the number of afflicted fish is heavy in some federal, state and commercial hatcheries, federal and state fish officers were confident the disease will be brought under control. The disease is liver cancer, called hepatoma, and has been found mainly in hatchery trout.

Ross Leonard, Boise, director of the Idaho Game and Fish Department, said it was first found last April in a shipment of trout from an Idaho commercial hatchery to California. Since then it has been found in state and commercial hatcheries in the 11 western states and in single hatcheries in Wisconsin and West Virginia.

"We've found in our researching that when fish are taken off certain commercial hatchery feeds, there seems to be a control pattern of the disease," Mr. Leonard said. Mr. Leonard thought the disease was found more in commercial hatcheries and attributed this to pushed feeding programs, because the fish are being prepared to market.

Ray E. Johnson, sport fisheries division chief, U.S. Fish and Wildlife Service, said he thought it too early to give any basic cause for the malady.

He said many avenues of research remain to be completed, such as heredity, water conditions, chemical bodies in water, each food ingredient and processes of manufacture. "We've checked waters for radioactivity," he added.

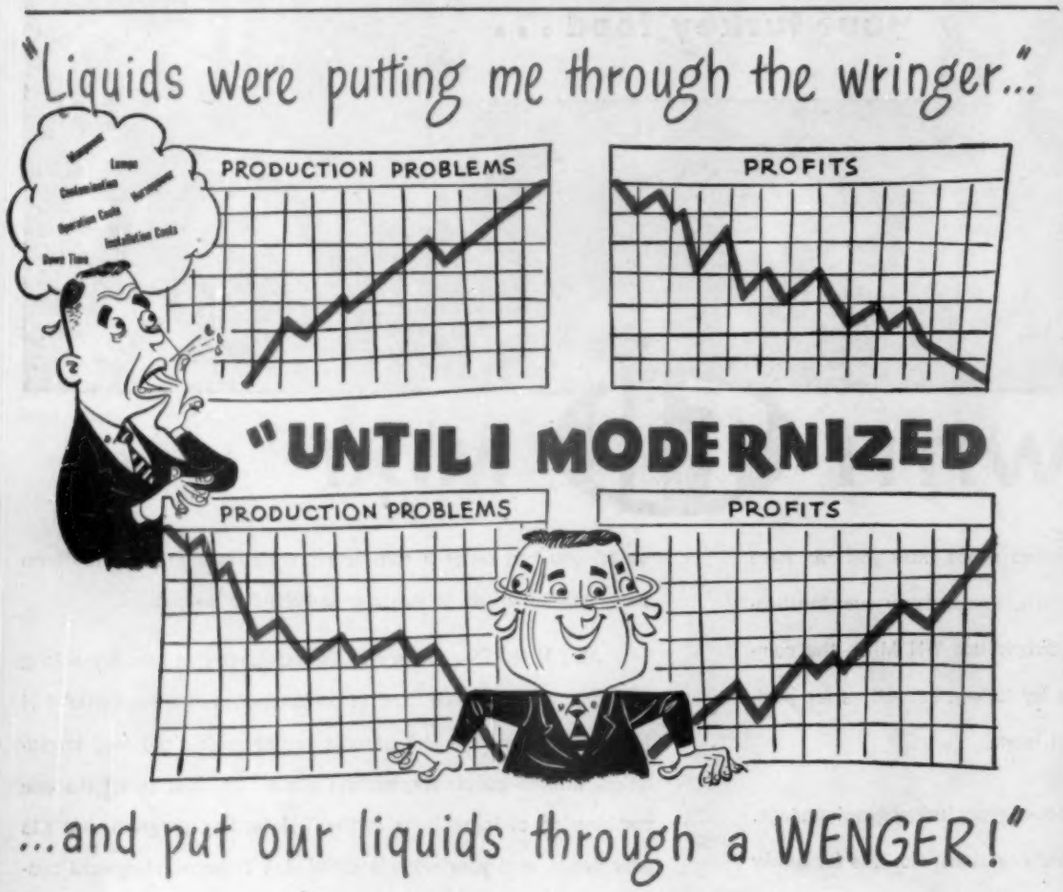
Mr. Johnson said that out of 100 federal hatcheries. the disease has been found in only three. He said it has not been found in the government's two small hatcheries near Creede and Leadville, Colo.

Fish officers from Colorado also reported "only traces" have been found in isolated state and commercial hatcheries. Extensive measures are reportedly being taken to prevent spread of the disease in Colorado. The officers said measures include controlled feeding, research and inspection programs.

Sales Firm Named

COMPTON, CAL. — Jobe & Co., Baltimore, has been appointed a representative of Sutorbilt Corp. for sales engineering and customer service, it was announced here recently by Paul M. Hollinger, general manager for Sutorbilt.

The newly-appointed representative will be responsible for activities in Maryland and Virginia. The Jobe firm, which maintains a branch in Richmond, Va., handles compressors, valves, air dryers and general industrial equipment. Sutorbilt designs and manufactures a line of positive displacement blowers, vacuum pumps and vapor compressors.



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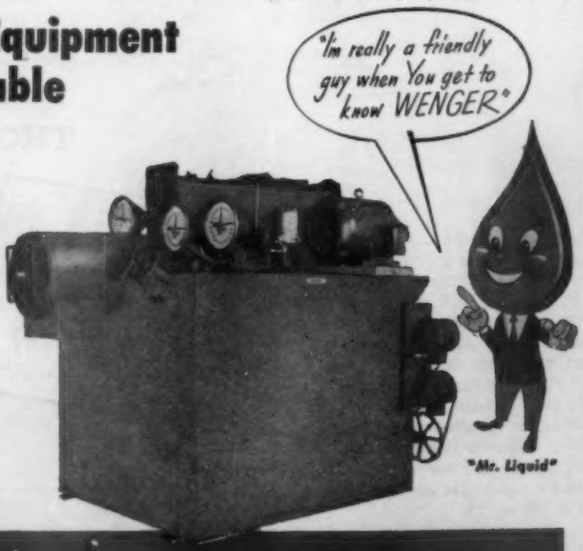

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Mr. Bryant (right) discusses the future of his Purina Service Center with an associate, James Lauver.

"For a quarter of a century, our aim has been better service to farmers"

—says Howard W. Bryant, Central Feed and Produce, Kirkwood, Ill.

Howard Bryant became a Purina Dealer 25 years ago because the franchise offered him an opportunity to be of greater service to farmers of the Kirkwood area.

Prior to putting up his Checkerboard Sign, Mr. Bryant made his own brand of feed. Then he saw the beginning of rapid progress in livestock and poultry nutrition and decided that his community would be served better if he turned to a manufacturer capable of properly blending ingredients with result-getting precision.

Today, "Get it at the mill" means the purchase of Purina Chows and Check-R-Mix rations that are research proved and manufactured with the exactness that brings results from modern feeding. It means getting such services as grain banking, bulk delivery and on-the-farm consultation based onPurina training.

"We've never been sorry we joined the Purina organization," says Mr. Bryant.

* * *

"Since we've been on the Purina team," says Mr. Bryant, "there have been four Purina Salesmen in this district. All of them have been top men . . . all have worked as 'sales partners' with our service center. Our present Purina Salesman, C. R. Payne, is typical. He advises on business management, helps train employees, holds meetings with farmers, and does on-the-farm selling. He has contributed greatly to our success."

Purina-trained Sales and Serviceman Verne Ritchey (second from left) discusses the Purina Hog Program with Farmer Don Krug, Dealer Bryant and Salesman Payne. Mr. Krug has raised his registered Spotted Poland Chinas the Purina Way for 16 years.

Mrs. Ruth S. Smith, one of two bookkeepers "at the mill," follows the Purina accounting method. Mr. Bryant considers Purina Dealer Business Management Service an important part of his operations.

"Purina Programs work because they are based on progressive research and practical experience," Mr. Bryant tells a group of farm folks.

PURINA...YOUR PARTNER IN SERVING ANIMAL AGRICULTURE

New Research on Feeding Beef Presented at Illinois Meeting

URBANA, ILL. — Scientists at the University of Illinois introduced their latest research on beef production to cattlemen at the annual Illinois Cattle Feeders Day held recently in Urbana. (Also see earlier story in Feedstuffs, Sept. 10).

Following is a round-up of some of the research items presented at the meeting:

Digestibility of Ground and Flaked Soybean Hulls Fed to Beef Steers—No apparent digestive disturbances or other ill effects were noted that could be attributed to feeding a ration made up entirely of soybean hulls, according to researchers R. R. Garrigus, A. L. Neumann and G. E. Mitchell, Jr.

During recent years, the demand of swine and poultry growers for higher energy feeds has increased. This change has caused many soybean processors to shift from producing soybean meals that contain 43 or 44% protein to producing meals that contain about 50% protein.

The desired increase in protein and decrease in crude fiber content have been accomplished mainly by an increased supply of soybean hulls. The result has been an increased supply of soybean hulls.

In the experiment, 12 yearling Hereford steers were started on a reversal-type digestion trial. Following a group-fed conditioning period, the remaining steers were individually fed 12 lb. of soybean hulls per head per day during the nine-day preliminary and seven-day collection periods. The hulls were fed in two equal portions daily. Six of the animals were started on the ground hulls, and four were started on flaked.

Water was offered twice daily, and the steers had frequent access to plain block salt. At the end of the first collection period, the treatments were reversed.

In summary, either form of soybean hulls should be highly useful as cattle feed, say the scientists. Crude protein was less efficiently digested than the other nutrients, but about half of the protein appeared to have been digested. Total digestible nutrients calculated from these data were 54.6% for ground soybean hulls and 63.4% for flaked soybean hulls. Flaking caused a highly significant increase in the digestion of all nutrients studied.

Effects of Grinding or Rolling High-Moisture Shelled Corn on Its Feeding Value When Fed to Beef Cattle—Thirty Hereford heifer calves fed various forms of dry or high-moisture corn for 131 days prior to this trial were randomly reallotted to three treatments (shelled, ground and rolled) in this test conducted by scientists H. A. Jordan, Mitchell and Neumann.

All heifers were full-fed high-moisture corn, supplement and hay for 53 days. Preparation method was the only ration variable. The heifers were fairly fat at the beginning of the test, and didn't make as rapid gains as might be expected.

The corn that was fed in ground form was ground through a hammermill with a one-half inch screen. The corn fed in rolled form was rolled in a mill with corrugated rollers. A day's supply of feed was prepared each day. The high-moisture shelled corn (31% moisture) showed excellent quality when removed from the silo.

The heifers consumed considerably more shelled than ground corn, and the rolled corn ranked in between. The ground corn was extremely fine. Although it had a good odor and was apparently palatable, it was hard to eat because of the fineness, or pastiness when damp.

The rolled corn was in large flakes when it left the mill, but seemed to disintegrate when handled. By the time the cattle ate the corn, much of it was fine meal. None of the corn in any form was consumed at what would be considered a maximum full feed (1.75 to 2% of body weight as dry corn).

Gains favored the rolled corn even though feed intake was not highest here. Gains recorded included 1.55 lb. per day for shelled corn, 1.58 lb. for ground and 1.72 lb. for rolled.

Rolling and grinding caused 18.3% and 15.9% reductions, respectively, in the corn required per 100 lb. gain. The total feed costs figured by the Illinois researchers (not including a charge for grinding or rolling) follow: Shelled corn, $21.91; ground, $20.09, and rolled, $19.85.

The scientists warn, however, that this test involved corn that was ground or rolled at removal and feeding time rather than at silo-filling or harvest time. "It is difficult to say whether the same results could be expected if corn preparation took place at the earlier time," they say.

Comparison of Corn Silage and Alfalfa Hay for Roughage During the Final Stage of a Steer Fattening Program—In this test, conducted by J. E. Zimmerman, Neumann, Mitchell and W. W. Albert, 24 yearling Herefords averaging 1,043 lb. were used. These steers had been full-fed for 168 days on high-energy corn silages. The cattle were divided randomly into two groups, both receiving 2.0 lb. of soybean meal plus ground shelled corn. One group was fed 15 lb. of corn silage and 1 lb. of alfalfa hay per head daily, while the second group was fed 5 lb. of alfalfa hay.

Substituting alfalfa hay for corn silage during the last 39 days of feeding increased the net return $3.38 per head. Shrink was slightly less and the sale price slightly more offset by the faster and more economical gains of the steers fed alfalfa hay.

The observed differences were small, say the researchers, and may not have been due entirely to differences in treatment. Therefore, further work is needed to gain more conclusive evidence.

Effects of Adding Soybean Meal to a High-Energy Silage Made of High-Moisture Corn and Alfalfa for Fattening Steers—Previous work at the University of Illinois has shown that high-energy ensiled rations of legume forage and shelled corn (so-called all-in-one silage) make excellent fattening rations for beef cattle.

It was reported at the 1959 Cattle Feeders' Day that adding 1 lb. of 50% soybean meal daily per steer to a full feed of high-energy silage consisting of equal parts of third-cutting alfalfa and high-moisture shelled corn seemed to improve steer gains even though the silage contained about 11.5% protein as fed.

The objective of this new study was

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to determine whether the improvement in gains was due to the extra protein or to the extra energy in the soybean meal.

The experimental procedure included mixing and ensiling equal parts by weight of field-chopped, third-cutting alfalfa and high-moisture shelled corn (about 30% moisture).

Eighteen Hereford steers averaging 607 lb. were randomly allotted to two experimental groups. The two lots of nine steers each were full-fed equal amounts of high-energy silage plus 1.5 lb. of alfalfa hay per head daily. An attempt was made to make protein the major variable in the ration by feeding approximately equal amounts of supplemental energy as 1.5 lb. of 50% protein soybean meal to one lot and 1.5 lb. of ground shelled corn to the second lot.

Each lot of cattle had access to a mixture of iodized salt, dicalcium phosphate and ground limestone. All cattle were weighed twice at the beginning of the test, and individual weights were taken at 28-day intervals.

The steers receiving the soybean meal made the largest daily gains (2.67 lb. versus 2.56) but the increase was not statistically significant.

The steers receiving soybean meal required 1,304.58 lb. of feed per hundred pounds of gain at a cost of $14.44, while the steers in the corn lot used 1,356.65 lb. of feed at a cost of $13.89.

Observations from the two-year study suggest that adding soybean meal to ensiled all-in-one rations of alfalfa and high-moisture shelled corn improved daily gains of steers, but at a slightly higher cost.

The differences in rate of gain, if real, are more likely to be due to differences in protein content than in energy content. Nutrients in soybean meal other than protein or energy may also be involved, say the researchers.

Effect of a Tranquilizer Implant in Combination With Stilbestrol on Fattening Steers—"Very little, if any, quieting effect was observed in the lot receiving the tranquilizer in this test," report researchers G. F. Cmarik, M. E. Mansfield and F. C. Hinds. "The results do indicate a somewhat more efficient use of feed by tranquilized steers, however."

Two lots of nine yearling steers each were started on test on Nov. 24, 1959, weighing an average of 745 and 793 lb. for Lots 1 and 2, respectively. The steers were drenched with phenothiazine and implanted with stilbestrol at that time.

Lot 2 received the tranquilizer implant in addition. On Jan. 9, 1960, after 56 days on test, Lot 2 was reimplanted with the tranquilizer as prescribed by the manufacturer.

At the time of the second implant, Lot 2 steers had gained about one third pound more per head daily than those in Lot 1, which had not received the tranquilizer. As the feeding period progressed, the advantage became less and less, and by the conclusion of the trial, average daily gain was essentially the same for both lots.

Feed was more efficiently utilized by Lot 2. About 350 lb. less feed and 250 lb. less total digestible nutrients were consumed per head. Lot 2 required approximately 55 lb. less feed and 40 lb. less total digestible nutrients than Lot 1 for each 100 lb. gained. The cost of gain was 92¢ less per 100 lb. for Lot 2. The feed cost does not include an estimated expense for processing.

In summary, the results of this trial indicate that the tranquilizer implant did not have any noticeably quieting effect on the cattle. Rate of gain was not increased, but less feed was required to produce 100 lb. of gain.

Hormone Implants for Feed-Lot Cattle—This implant trial was superimposed on the corn silage, high-energy silage, dwarf corn silage and high-moisture corn experiments being conducted at the University of Illinois. In each case, three of the cattle on each feeding treatment received each implant treatment.

In the corn silage experiment, three steers in each lot were (1) implanted with 12 milligrams of stilbestrol, (2) implanted with 24 milligrams of stilbestrol, and (3) injected with Rapigain.

For the high-energy silage and

(Turn to page 54)

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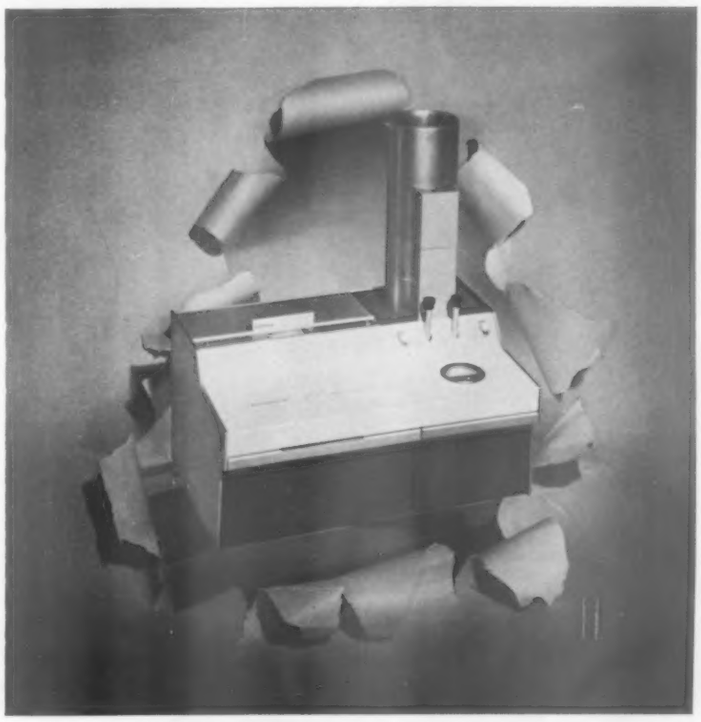

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QUARTER CENTURY CLUB PICNIC — The Quarter Century Club of Sprout, Waldron & Co. was entertained by Harold M. Soars, the company's president and general manager, recently at his hunting and fishing club at Dunwoody, Pa. A total of 63 of the 86 members took part in the skeet shooting, horseshoe pitching and quoit tournaments. Of those present, 31 were active and 32 retired. Of the company's present payroll of 750 employees, 51 have been with the company 25 or more years. In this picture, the front row is made up of eight men, all of whom boast 50 or more years of continuous service. Two are still active. In addition to these eight, four have amassed similar records.

dwarf corn silage lots, hormone treatments were (1) 36 milligram stilbestrol implants, (2) Rapigain injection, and (3) Rapigain injection followed by a 24 milligram stilbestrol implant 112 days later.

In the high-moisture corn experiment, three heifers in each lot were (1) untreated, (2) implanted with 12 milligrams of stilbestrol, and (3) injected with Rapigain. The cattle were randomly assigned to the hormone treatments in all cases. Since the effectiveness of stilbestrol implants for steers has been well established, no untreated controls were left in the steer lots.

In the corn silage trial, Rapigain-treated steers gained at about the same rate as steers that were implanted with 12 milligrams of stilbestrol, but slower than steers receiving 24 milligrams of stilbestrol.

In contrast to results reported last year, the 12 milligram stilbestrol implant was not as effective as the 24 milligram implant even in the early stages of feeding. Differences between hormone treatments were small for the steers fed dwarf corn or high-energy silages but favored the conventional 36 milligram stilbestrol implants. Side-effects were minor, and no consistent differences were noted between treatments.

The increase in steer gains following a 12 milligram stilbestrol implant seems to be less consistent than the increase following 24 or 36 milligram implants. The combined results of these experiments do not indicate an advantage for Rapigain over implants now in use, according to the researchers, Mitchell, Albert, Zimmerman and Neumann.

Comparative Efficiency of Equal Amounts of Creep Ration When Fed to Suckling Calves or Nursing Cows—Increases in calf weights can be obtained more economically by providing creep feed for the calves than by feeding the cow more liberally, according to the results of this test conducted by Zimmerman, D. L. McMahan and Neumann.

The creep fed calves in the test, receiving a mixture of six parts oats, three parts corn and one part linseed meal, gained an average of 27 lb. more than those calves receiving no creep.

Nursing cows receiving extra grain in a creep feed gained an average of 35 lb. more than those cows receiving only roughage. Cows receiving the creep did not decrease their consumption of silage, either. In fact, they consumed about one pound more silage than the roughage-fed cows. The total feed consumed by each cow-calf pair was nearly identical.

Comparison of Hay Fed in Various Forms to Weanling Calves—Gains in this trial were as expected in that heifers fed wafers outgained those fed long hay, report scientists Cmarik, G. E. McKibben and R. J. Webb. Also, the heifers fed pellets outgained those fed wafers. The heifers fed the high-energy pellets gained faster than those fed pellets made from the same roughage contained in the wafers and long hay.

In Trial 1, conducted during the winter of 1958-59, four lots of nine Hereford heifer calves each were fed long hay, hay wafers, hay pellets and high-energy alfalfa pellets.

The hay from which the wafers and pellets were made came from the same cutting and field as the long hay and consisted of mixed clover and orchard grass. The high-energy pellets were a commercial product of the alfalfa dehydrating industry and contained about 7½% of blackstrap molasses.

Highest daily gains came with the high-energy alfalfa pellets with 1.62 lb. Other daily gains recorded include long hay, 0.31 lb.; wafers, 0.71 lb., and hay pellets, 1.48 lb.

In turn, feed consumption was highest for the high-energy pellets. Following is the feed consumption per head for the four lots: Long hay, 1,037 lb.; wafers, 1,033.1 lb.; hay pellets, 1,483.9, and high-energy pellets, 1,678.7 lb.

An increased consumption of the high energy pellets over the hay pellets could account for the higher gain of one lot in the trial.

The test results indicate that weanling calves readily accept hay wafers and make satisfactory gains on

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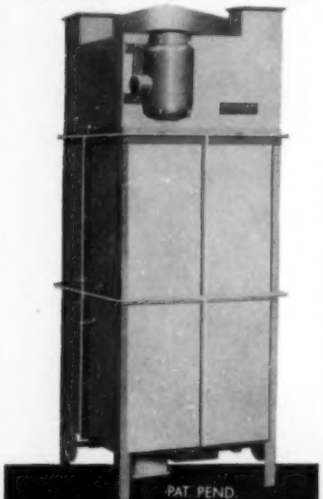

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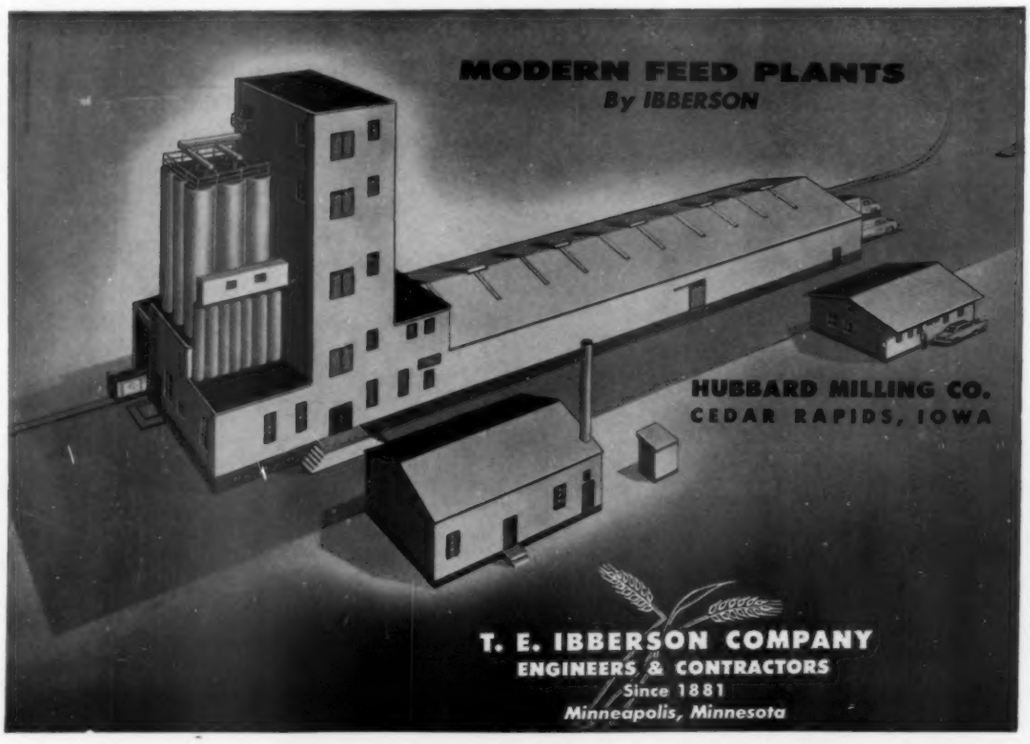


roughage in this form. Size and shape do not reduce consumption even though the wafers might appear to be too hard for calves to consume. The fact that wafers can be handled by some types of conveying equipment could be a factor in reducing requirements in feeding, conclude the researchers.

In this trial, the wafering machine used by the University of Illinois researchers was furnished by International Harvester Engineering Works, Memphis, Tenn., the pellets were manufactured by Scott County Milling Co., Sikeston, Mo., and the high-energy pellets were furnished by National Alfalfa Dehydrating and Milling Co., Lamar, Colo.

(Four other research reports presented at the Cattle Feeders' Day appeared in the Sept. 10 issue of Feedstuffs. These topics included "Recovery of Feeder Steers Deficient in Vitamin A," "How Long to Feed Corn Silage Free-Choice for the Cheapest Gains," "Feeding Value of High Moisture Ground and Shelled Corn" and "Dwarf Corn Silage Versus Regular Corn Silage.")

Falling Costs Help Broilers Show Profit

By Special Correspondent

NACOGDOCHES, TEXAS — After the past three years in a losing game of broiler growing, most dealers say 1960 will show improvement. Though prices are lower than in the early 1950's, some profits can be expected this year.

"We are growing broilers cheaper than ever before," said W. B. Sitton, a co-owner of the Sitton Brothers Feed Store, which feeds about a million birds a year. "It is now possible to grow an average-weight broiler for as little as 13½ to 14¢ lb. during the summer months. During cold weather, we need to add another 1-1½¢.

"I am speaking of the large integrated dealer now. A small independent producer who must buy feed at retail prices and spend more on labor can't produce the birds for this price."

Shaving Costs

Some ways the integrated producer is shaving operational costs is by feeding larger units. Some families are now keeping up to 22,000 birds, and this provides a saving on feed and chick hauling. All feed is in bulk form and the feed trucks are getting larger, so this helps cut down on delivery trips.

Most dealers now have either their own hatcheries or a working agreement with one. Also, there is closer management all along the line. Service men are working closer with farm contractors, and everyone in the industry is taking advantage of the latest research in nutrition and poultry improvement.

Also, within the last year or two, the large dealer is putting in his own breeder flock so he can control the hatching. As yet not many dealers have their own processing plants because of the tremendous financial investment.

A processing plant large enough to make a profit will cost at least a quarter of a million dollars—and very few of the producers care to invest this amount in view of the low broiler prices existing during the last three or four years.

Numbers Increase

"In spite of all our setbacks, the number of broilers is steadily increasing," said Mr. Sitton. "We have fewer people, but larger units. The small independent grower is just about gone. In this area, I'd say that not over 1% of the birds are grown by farmers, except on a contract basis for some large producer."

Another trend in recent years has been toward pelleted feed. The average dealer now starts the chicks out on crumbles, then switches over to pellets in about five weeks. A few are now using a special, highly fortified feed the last few days before marketing.

"We have taken a long, close look at our management practices the last two years," explained Mr. Sitton. "By improving our practices all along the line from hatching to marketing, we have probably shaved growing costs by at least a cent a pound."

Ask Poultry Research Lab Site at Delaware

WILMINGTON, DEL.—U.S. Senator John J. Williams (R., Del.) and Gov. J. Caleb Boggs have urged the U.S. Department of Agriculture to build a new poultry research laboratory at Georgetown, Del.

They said in a statement issued recently that a proposal by U.S. Senator J. Allen Frear, Jr. (D., Del.) to build the laboratory at Salisbury, Md., would be a "complete waste of money."

"This is not just a matter of state pride," said the two Delaware Republicans. "The facilities are needed to serve the whole Delmarva Peninsula, and the University of Delaware, which is adequately equipped, is the only university located on the Delmarva Peninsula."

The Williams-Boggs proposal urged USDA to seek funds next year to construct the poultry laboratory in connection with the University of Delaware extension division at Georgetown.

Sen. Frear and U.S. Rep. Thomas F. Johnson (D., Md.) proposed two weeks ago to establish the poultry laboratory at Salisbury to be operated in conjunction with the University of Maryland.

Sen. Williams and Gov. Boggs retorted that "it would be a complete waste of money to establish entirely new and separate facilities on the Eastern Shore when we already have a small research center being operated by the University of Delaware in the center of the broiler industry."

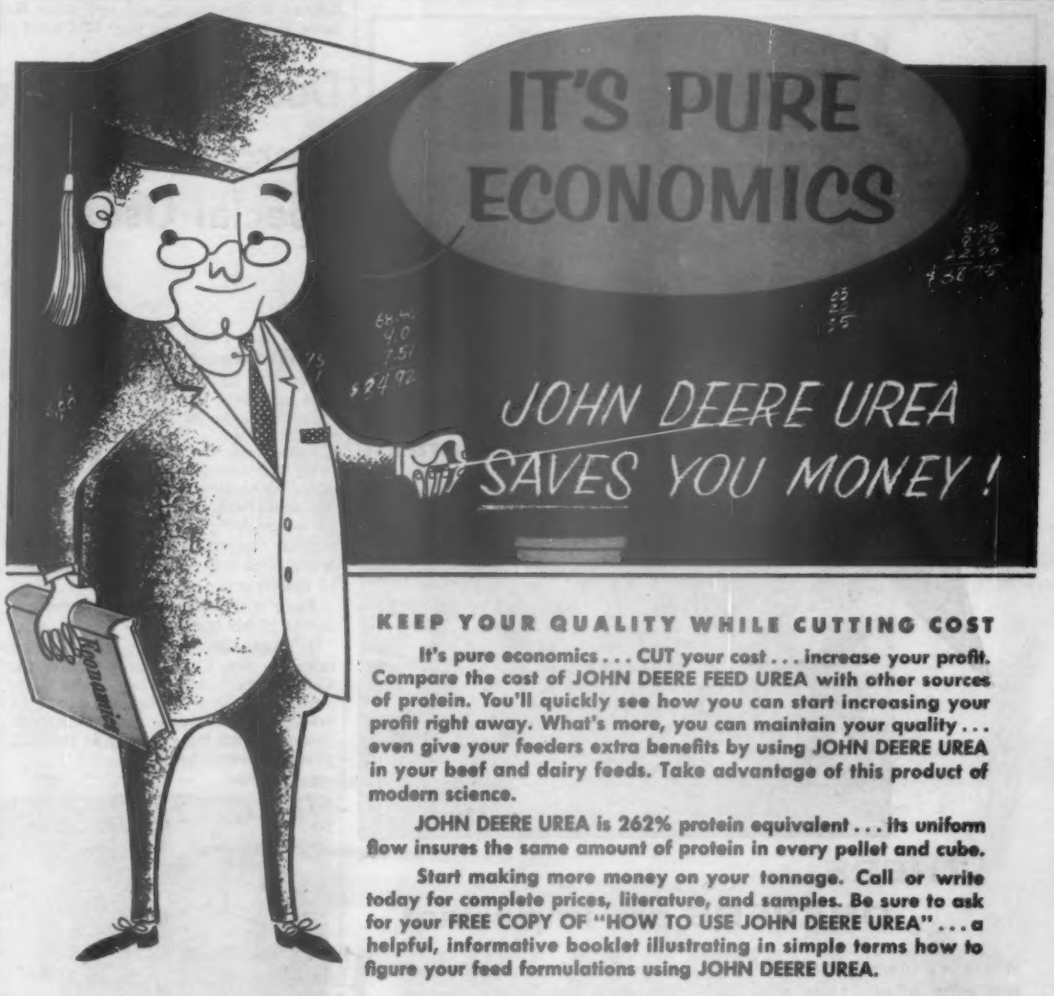
Murphy Products Co. Names Ohio Manager

BURLINGTON, WIS. — Murphy Products Co. here has announced the appointment of Thomas D. Neely, New Philadelphia, Ohio, as a new division sales manager for Ohio.

Thomas D. Neely

Mr. Neely has taken over duties of divisional sales manager for northern Ohio after two and one-half years as supervisor of a Murphy district in east central Ohio, according to L. J. Warren, vice president and general sales manager.

Mr. Neely will coordinate and supervise all sales, service and marketing activity in his area for the Murphy Cut-Cost brand of livestock feed concentrates.



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BULK STATION—The bulk feed station of Mac's Feeder Supply, Belmond, Iowa, is shown here. There is some grain storage for grinding done by the mobile mill at the store on certain days. From the left, the men shown are: Robert Watermiller, mill operator; Robert Railsback, Wayne feed salesman, Iowa Falls, Iowa, and Guy McClenahan, owner.

Dealer Finds Success in Merchandising Services and Special Uses of Mobile Units

By Al P. Nelson
Feedstuffs Special Writer

How does a feed man without a stationary mill meet present day competition and build a sizable, profitable feed business?

In the case of Guy McClenahan, owner of Mac's Feeder Supply, Belmond, Iowa, the answer involves a little explaining. Chiefly, the reason why this dealer is succeeding is that Mr. McClenahan has taken advantage of a number of merchandising and service opportunities in his large trade area and is satisfying a variety of customers.

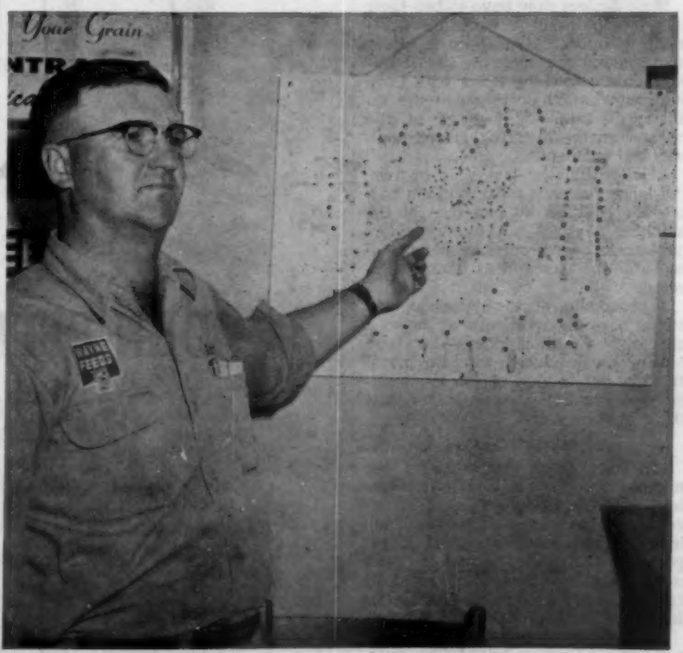
Here are some of the interesting facets of his business:

1. Mobile mill service. He owns and operates two Champion mobile mills. One is operated full time in the trade area. The other Champion, which he bought as a spare, is used for special jobs and also for grinding at the mill premises when needed.

Mr. McClenahan charges mobile mill customers $6.50 per batch for grinding and mixing if they use Wayne concentrates. If they use other concentrates, the charge is $7 per 5,000 lb. batch. The customer gets discounts for each batch after the first one.

The second mobile mill is used primarily for grinding ear corn, the charge for which is $5 per batch. Mr. McClenahan reports a lot of farmers want ear corn ground and the second mill handles the job promptly. This enables the other mill to proceed on schedule with grind and mix jobs on regular routes.

The spare mobile unit is also used at the Belmond store headquarters on certain days to grind and mix complete hog feed in bulk. In this case, the complete feed is either augered into the farmer's waiting truck, or



IMPORTANT POINTS—Guy McClenahan, owner of Mac's Feeder Supply, Belmond, Iowa, points to pins on his area map. Each pin indicates a farm where he does on-the-farm grinding and mixing with his Champion unit.

EXTRA DOLLARS—Interior of the Belmond Sales Pavilion is shown here. Owner Guy McClenahan gets a percentage from the local promoter who sells the signs to various merchants.

into Mac's six ton bulk feed truck equipped with Sno-Go auger.

2. Grain exchange plan. Mac's has 4,000 bu. corn storage in Butler bins at the store premises, plus 2,000 bu. oats storage. At Mr. McClenahan's farm two miles distant, he has another 2,000 bu. corn storage and 2,000 bu. oats storage.

This means the firm has corn and oats to sell if a farmer wants a complete hog feed with local grain. Mac's can thus make up the complete feed the farmer wants from the farmer's grain exchange account or can sell him grain for the order.

The farmer pays 3¢ per bushel for grain handling and storage. He also pays 8¢ per bushel for drying his corn down to 13.5% in a Butler drier. So, no matter what type of feed the farmer wants, Mac's has the concentrate, the grain, etc., to work out the formula. This versatility wins customers with special feed requirements.

3. Bulk station. Mac's has a Wayne feed bulk station, involving six Butler metal bins, each holding six tons of concentrate or complete feeds. The operation of this station, with stamped weight tickets and concentrates and complete feeds in bulk, has given Mac's a flexible sales punch which is bringing home a lot of orders. The Wayne feeds, bulk and bag, are trucked to Belmond from Mason City about 35 miles distant.

"With this bulk station we can, in connection with our grain exchange and mobile service, give a farmer excellent service on his feed needs," says Mr. McClenahan. "We can service all customers, small and large, and compete pretty well with anyone."

4. Outside selling. Mr. McClenahan knows the value of personal selling. He's got a full time salesman who visits cattle, dairy, hog and poultry feeders in the region. The salesman spends considerable time with feeders going over their feeding problems, gains, costs, etc. This sort of selling pays off in a steadily growing customer list.

"I do some outside selling myself now and then to help out," says the owner. "If my salesman has spare

SALES PAVILION—Guy McClenahan, owner of Mac's Feeders Supply, Belmond, Iowa, operates this sales pavilion in addition to his feed business. Up to 250 farmers attend the weekly sales there.

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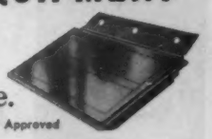

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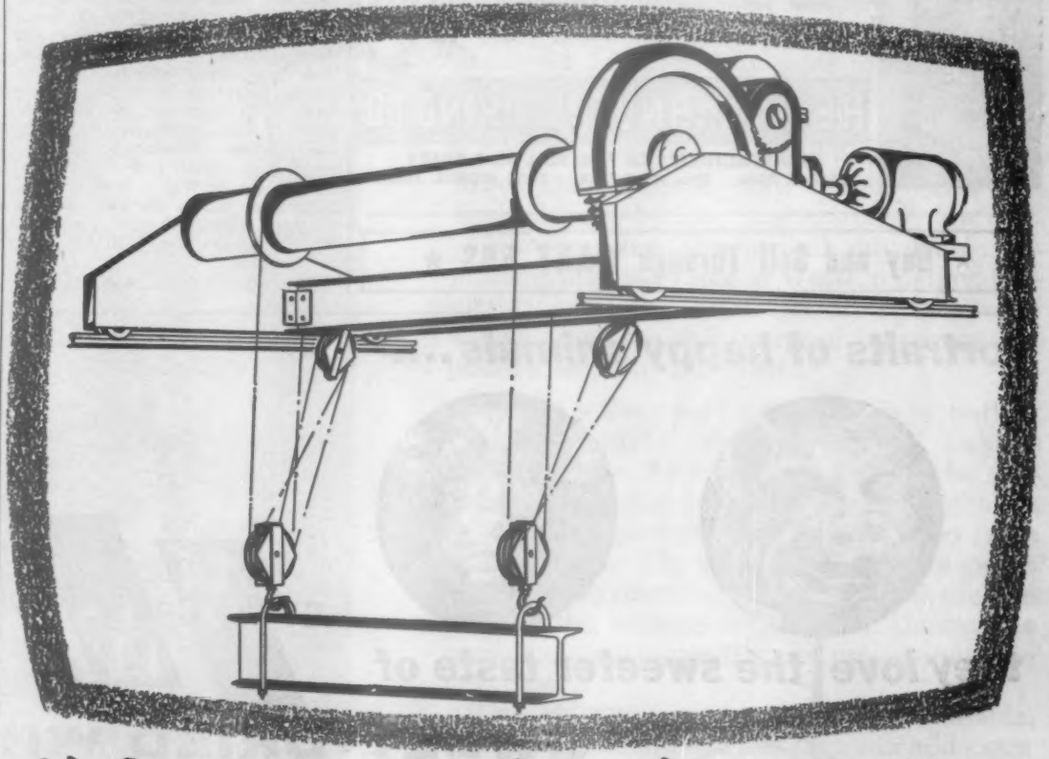

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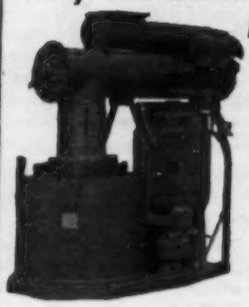
BRANCH OFFICES: ATLANTA, GEORGIA; CHICAGO, ILLINOIS; DENVER, COLORADO; DES MOINES, IOWA; FORT WORTH, TEXAS; HASTINGS, NEBRASKA; KANSAS CITY, KANSAS; PHILADELPHIA, PENNSYLVANIA; PHOENIX, ARIZONA; SAN FRANCISCO, CALIFORNIA.

SALES REPRESENTATIVES: THOMER EQUIPMENT CO. • MINNEAPOLIS, MINNESOTA

Helm NEW IMPROVED
PELLET MILL

Produces Perfect Pellets with Any Molasses Content UP TO 30%



NO SPECIAL ADAPTER NECESSARY . . .

- U.S. "PowerGrip" Timing Belt does away with gear box and eliminates all slipping . . . all power is used for pelleting.
- Equal Pelleting from BOTH ROLLS . . . Variable speed knife enables you to cut pellets to different lengths with IMPROVED LENGTH CONTROL.
- STATIONARY DIES prevent slinging off of Pellets before you obtain length desired . . .
- MACHINE ESPECIALLY ADAPTED for ROUGHAGE.
- HORIZONTAL DIES and VERTICAL ROLLS with the Helm method of feed induction give equal performance INCREASING YOUR PELLET PRODUCTION!

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MANUFACTURERS OF FEED MILL MACHINERY
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★ Buy and Sell Through WANT ADS ★

time he helps with mobile grinding jobs at the store premises on some rush days, too. None of us are ever idle at this place."

Mac's has a third employee, too, who works at the warehouse and store. All employees are eligible for a bonus at the end of the year, depending upon the amount of profit made. This gives employees an added incentive to do a good sales and service job, Mr. McClenahan states.

"When I started this business eight years ago, it didn't sell any feed," says Mr. McClenahan. "Through sales promotion, we have increased our feed volume each year since I started here."

5. Sales pavilion. A traffic building and sales sideline here is a livestock sales pavilion, with a seating capacity for 500 people in tiered plank seats around the sales ring. The livestock auction is held every Tuesday from 7 to 11 p.m. from May 1 to Nov. 1. In the winter the auctions are held afternoons.

Mr. McClenahan has a partner in the sales pavilion who is the auctioneer. Mr. McClenahan assists by working in the sales ring.

"This sales auction attracts many farmers who want to buy cattle, sheep and hogs," he says. "We sell a lot of feeder pigs. In 1958 we sold 44,000, but not as many as this in 1959 and early 1960. We try to sell these feeder pigs within 48 hours after they arrive here. If we can't sell them in 72 hours, we have a vet check their health and vaccinate them for cholera. We then feed them at our farm for 21 days, and eventually sell most of them through our weekly sales auctions. People who buy our feeder pigs—if they live in the area—usually stay on Wayne feeds and buy them from us. So this sales auction program helps our feed business, too. We usually get about 250 people at the auctions."

The sales pavilion abounds with signs of various merchants advertising their products and services. The signs are colorful and appealing. A local man sells the advertising and puts up the signs and the owners get a certain per cent of the gross. This is extra revenue and the local merchants are reported to get many new customers through such ads, Mr. McClenahan says.

He reports that free choice feeding is slipping fast in this area. For pig starter, 75% of the feed sold is complete feed. Most of the egg producers who have 500 to 1,500 laying hens or more also want a complete feed. Flock owners in the area take about two to two-and-one-half tons of feed at a time.

6. Credit. Mac's extends customers a $2 a ton cash discount which gives farmers a chance to pay quick and make a saving. Such a cash discount helps turn capital faster, says Mr. McClenahan. Of course, he has trouble with a few delinquent accounts as do most dealers.

"If I have collection troubles with slow pay customers, I manage to take time out to visit some of the accounts," he says. "This is the best way. Talk with a customer face to face and you can usually work out some method of getting payment on an overdue feed bill, even if you have to get a few dollars at a time. All customers, even the quick pay, like to have a dealer visit them on the farm. I've learned that.

"When a customer stops buying from us, I make a trip to see him. Often I win him back. Just the other day I got a big feeder back as a customer. When I asked him the reason why he had left us, he said he just felt we were not giving him and his business enough attention. Well, I showed him from my records that I was watching his hog feed account very closely, and was making changes in the ration as his hogs got older. This convinced him, and he came back as a steady customer."

portraits of happy animals....

they love the sweeter taste of

MIDWEST

SWEET • DRIED WHOLE WHEY

. . . they thrive on its growth and health promoting milk nutrients — the easily digested milk sugar (lactose) high quality milk protein, minerals, water soluble vitamins and unidentified factors.

The most economical source of high quality milk solids for such critical formulas as

- BABY PIG FEEDS
- SOW RATIONS
- CALF MILK REPLACERS
- DOG FOODS
- POULTRY RATIONS

AVAILABLE
in 3 convenient grinds

CUSTOM (40M) — for use in milk replacers

GRANULAR — for bulk handling and special needs

REGULAR — for general use

AVAILABLE — the year around — Midwest's storage facilities assure customers of an adequate supply of sweet, freshly ground dried whole whey during all seasons of the year.

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DRIED MILK COMPANY
DUNDEE • ILLINOIS
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THEY COME *on the run...*

when feed palatability is improved with Milezyme* "on or off the sow"

Test results prove it: Milezyme improves the performance of all livestock and poultry feeds. The reason is that Milezyme enhances natural feed palatability. Animals and poultry eat more and gain faster . . . efficiently.

The most significant results have been shown in pig starter and prestarter feeds. A summary of all college and commercial feeding trials conducted with Milezyme in pig feeds shows palatability improved 7% . . . weight gains improved 9-10% . . . efficiency improved 2.5%. Weight gains in baby pigs of over 10% reflect an average response of a Corn-SBOM (no sugar) diet.

Used in swine growing and finishing rations, Milezyme improved both weight gains and feed efficiency by 5% . . . at extremely low cost.

Milezyme has also proved valuable in upgrading the feed value of Western barley, low-quality corn and other grains. It is already widely used for this purpose in commercial poultry feeds in the West.

What is Milezyme? Milezyme is a natural enzyme catalyst derived from B. Subtilis microorganism fermentation (not to be confused with pepsin of animal origin). Although essentially a protein, it is not added to feeds as a nutrient. The microorganisms are grown for their enzymatic activity, and are used to balance the enzyme activity lost during the period between harvesting and processing grain into feed.

Two Milezyme products are now available. Let us recommend the one that can add extra palatability and performance to your feed. Write for full facts today.

*Milezyme is not a drug and is exempt from the provisions of the Food Additives Amendment of 1958.

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AT LAST

YOU CAN HAVE ACCURATE DOCKAGE PERCENTAGE

in one quick glance . . .

Increase your soybean profits this year

ARMSTRONG PERCENTAGE AND DOCKAGE SCALE

. . . eliminates pencil work. Calculates percentages from weights of 250 to 500 grams. Fast and foolproof. Only one of its kind.

Accepted by farmers as well as grain elevators.

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CALL *Babe, Bob* or *Bus Stuart* for

★ MILL FEEDS ★ LINSEED MEAL ★ SOYMEAL

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RELIANCE FEED CO. FOR 38 YEARS

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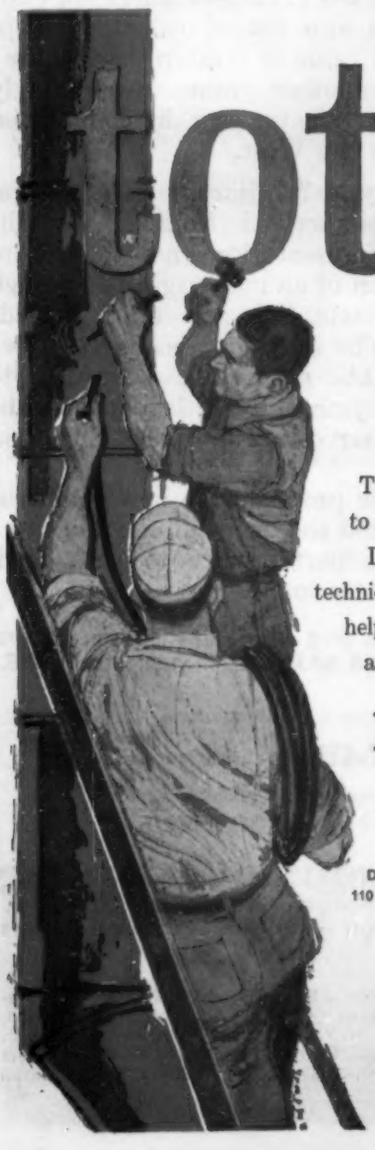
total

control of storage insect problems

Total service—from chemicals to application equipment. Your Larvacide distributor has full technical facilities and know-how to help on all details . . . including automatic Larvacide systems.



Larvacide® systems

PANOGEN® COMPANY

Division of Merton Chemical Company
110 North Wacker Drive, Chicago 6, Illinois

Allied Mills Sees Continued Growth In Its Business

CHICAGO — Continued business growth has been pledged by officials of Allied Mills, Inc. "Your company has more than kept pace with the industry's growth in the past and is determined to continue its leadership in this respect in the future," said Elmer W. Lenz, chairman of the board and president, in his letter to shareholders in the firm's annual report.

(Figures and comments on Allied Mills business for the fiscal year ended June 30 were reported previously in Feedstuffs, Sept. 10.)

The company head commented, "Leaders in the industry predict that the growth will continue in close relationship with the rate of growth of our population, which is expected to be from 4 to 5% per year."

Mr. Lenz stated, "The economics in agriculture continue to be unfavorable in many areas of food production. Farmers continue to produce slightly beyond the needs, which affects the selling price of many agricultural commodities. Our company, as a part of the feed manufacturing industry, has made significant contributions in these adverse economic periods through improved efficiency in the nutrition furnished. This has resulted in lower unit production costs for farmers.

"We have in this country a rapidly changing, but a dynamic and growing agriculture. The production of food for our steadily increasing population is basic. The feed manufacturing industry is a vital part of the nation's food production process. Therefore, we can be optimistic when we consider future prospects for our industry and our company over the long-range period.

Industry Grows

"The 1958 business census figures showed the feed industry ranking 13th among all industries from the standpoint of value of products shipped. This was a step up from our 16th position in 1954. The feed industry tops all industries from the standpoint of value of products and services sold to farmers.

"As has been mentioned, the past year has not been a satisfactory one for the soybean processing industry. However, we are hopeful that in the current year satisfactory processing margins may again be established. With the addition of the newly completed soybean solvent extraction plant at Gunterville, Ala., your company will be in a splendid position to benefit from any improvements in this area of operation.

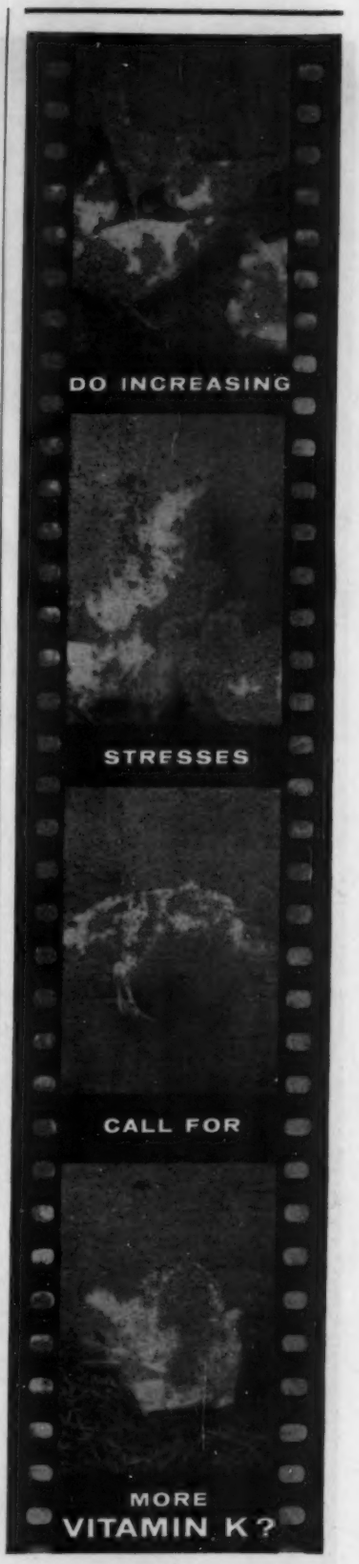
"This new processing plant is of the very latest design and has a daily capacity in excess of 500 tons of soybean meal, with storage facilities for approximately one million bu. This new plant accounted for the major portion of the capital expenditures for the year.

No Major Expenditures

"Looking ahead to the year ending June 30, 1961, we do not anticipate any major capital expenditures. Normal additions and improvements in plant facilities should not exceed our depreciation charges.

"Our Texas operation, which was announced in last year's report, is progressing satisfactorily. In March of this year, our Texas subsidiary took over the formula feed business of the Fant Milling Co., Sherman, Texas, which company had decided to discontinue this phase of its operation. No fixed assets were purchased, but favorable negotiations were made for acquisition of its livestock and poultry feed tonnage. The acquisition of this additional feed business has been beneficial to our Texas company.

"The important work of our research division at Libertyville, Ill., has been continued and emphasized.



Continuing research indicates that as the stresses of disease, medication and handling increase, so does the need for vitamin K. When you have a vitamin K need (or problem), ask for . . .

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CHEMICAL MARKETING DIVISION
NORTH CHICAGO • MONTREAL

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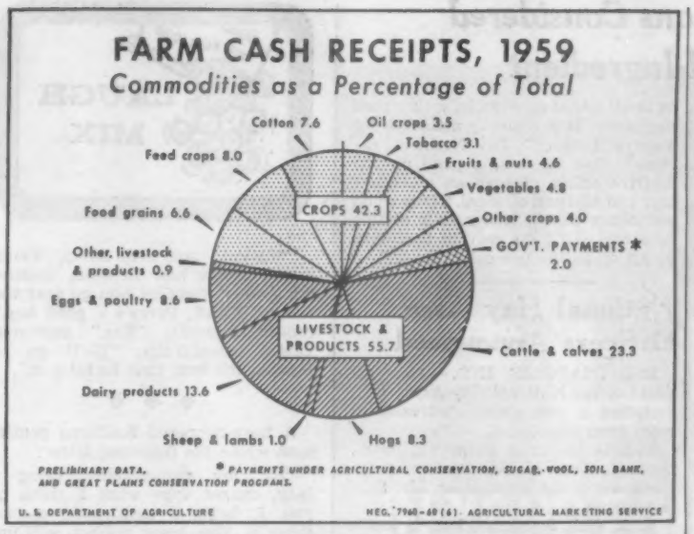
FARM CASH RECEIPTS, 1959
Commodities as a Percentage of Total
Cotton 7.6
Oil crops 3.5
Tobacco 3.1
Feed crops 8.0
Fruits & nuts 4.6
Vegetables 4.8
Food grains 6.6
CROPS 42.3
Other crops 4.0
GOV'T. PAYMENTS * 2.0
Other, livestock & products 0.9
Eggs & poultry 8.6
LIVESTOCK & PRODUCTS 55.7
Cattle & calves 23.3
Dairy products 13.6
Sheep & lambs 1.0
Hogs 8.3
PRELIMINARY DATA. * PAYMENTS UNDER AGRICULTURAL CONSERVATION, SUGAR, WOOL, SOIL BANK, AND GREAT PLAINS CONSERVATION PROGRAMS.
U. S. DEPARTMENT OF AGRICULTURE
NEG. 7960-60 (6) AGRICULTURAL MARKETING SERVICE

FARM CASH RECEIPTS—During 1959, farmers' cash receipts from marketings of farm products and government payments totaled $33.8 billion, according to a report from the U.S. Department of Agriculture. Livestock and their products accounted for 55.7% of this total, crops made up 42.3% and government payments the remaining 2%. Cattle and calves were the largest single source of receipts (this includes sales of animals from milking herds). This group was followed by dairy products, poultry and eggs and hogs, in that order. Cotton led the crops as a source of receipts, followed by feed crops and food grains. Detailed returns for other crops are shown in the graph above.

Present day feeding operations demand constantly improved products and management practices. For several years your company has used this statement 'Builders of Tomorrow's Feeds . . . Today' in all types of advertising. Through a very thoroughly planned public relations and promotion program, this theme, with outstanding examples of highly satisfactory results from improved products and modern efficient feeding programs, is being held constantly before the feed buying public in a way that should result in increased sales. Your company looks to the future with full confidence that its research program will keep it in a leading position with the products and services needed by the modern producers of meat, milk and eggs."

Canadian Hog Quality Premiums Are Revised

OTTAWA—The Dominion Minister of Agriculture has announced that effective Oct. 3, slaughter hogs grading Canada Grade A will receive a quality premium of $3. At present, premiums being paid include $2 for Grade A hogs and $1 for Grade B.

In view of the importance of encouraging the highest possible percentage of Grade A hogs, the entire quality premium will be awarded to hogs of that grade under the new policy, according to the report.

This procedure is in line with a statement the Minister made in connection with the change in national grade standards for hog carcasses which went into effect on Oct. 5 of last year.

At mid-point in 1960, 31.1% of Canada's hogs were of Grade A quality. This is slightly higher than the 29.4% recorded at the end of July last year.

Hog production cutback in Canada appears to have come to a halt, too. Sow breedings during August were down only 1% as compared to the same month last year.

Average weekly hog marketings during August of 108,000 head were slightly below the level of 108,700 per week in July, but nearly 35,000 per week less than during August last year. Total hog marketings for the first eight months of this year at 4.6 million head (136,000 per week) were down 16.5% from the 5.5 million head (163,000 per week) marketed to this date in 1959.

Cincinnati Feed Club's Next Meeting Is Oct. 3

CINCINNATI — The Cincinnati Feed Club will resume its monthly dinner meetings on Oct. 3 at Schuller's Wigwam Restaurant, when the speaker will be J. H. Noyes, plant manager, National Lead Co. of suburban Fernald, Ohio, where highly purified uranium metal is produced for the Atomic Energy Commission. Mr. Noyes has secured permission to show certain atomic energy films.

The club's chairman, Lucian A. Garner, Quaker Oats Co., Inc., Lawrenceburg, Ind., has announced the following committee chairmen for this year's club activities:

House—Edward C. Cohan of Merrill Lynch, Pierce, Fenner & Smith; finance — Dr. Lawrence Carpenter, Distillers Feed Research Council, and C. C. Folzenlogen, Schenley Distillers, Inc.; program—Harley Aylor, John F. Young Co.; membership — Carl Pollack, Werthan Bag Corp., Batavia, Ohio; nominations — William Dewey, Dewey Brothers Co., Blanchester, Ohio, and golf — A. J. MacGregor, Kentucky Chemical Industries, Inc.

INCORPORATION FILED

LOVELAND, COLO. — Marianna Farms, Inc., has filed articles of incorporation listing $145,000 authorized capitalization to engage in a feeding and ranching business. Incorporators are: William L. Bray, Cecil Swanda and George A. Fancher. Directors include: Mr. Swanda, James J. Donelly, Ira Carfield, Mr. Fancher and Charles J. Callahan.

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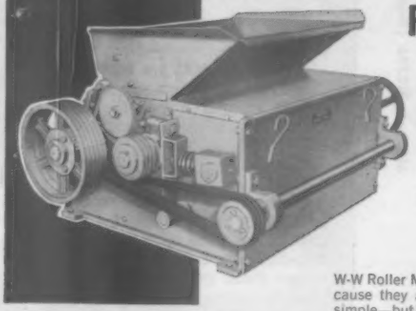
Amburgo
DISTRIBUTORS and SERVICE for
KLOTOGEN F
(Abbott)
Vitamin K
(Menadione Sodium Sulphate)
The leading Vitamin K. Water soluble cereal carrier. Assay assured. More potent.
THE AMBURGO CO., INC.
1315-17 Walnut St., Phila. 7, Pa.
AMBURGO "WEST"—3852 E. Sussex Way, Fresno, Calif.
AMBURGO "CENTRAL"—Amburgo Mfg. Co., Inc., Hope, Indiana
"It's good business to do business with Amburgo"

YOU'LL LIKE WHAT YOU BUY IN A W-W ROLLER MILL!



* LIFETIME CONSTRUCTION
* ACCURATE SINGLE-WHEEL CONTROL
* PERFECTLY PROCESSED FEED

W-W Roller Mills are years ahead of others, because they are built to last a lifetime, have simple—but accurate—operation, and process every kernel exactly the way you want it—either crimped, cracked, or crumbled with a minimum of flour. Heavy cast-iron frame-work won't rust out. Chilled white iron rolls, hardened throughout, don't chip or peel, yet can be regrooved many times (roller exchange regrooving service available). A single control wheel handles all adjustments—can be set even when operating. Produces highest capacity of perfectly processed feed per horsepower of any in the field. Adaptable to any power, including PTO! *Write for literature and complete information.*

PRICES AND SIZES TO FIT YOUR NEEDS

Model	Roll Size	H. P.	Price Only*
706-S	10"x 6"	1	$189.50
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718-S	10"x18"	7½	580.00
824-S	10"x24"	10	773.00
830-S	10"x30"	15	1,080.00
836-S	10"x36"	20	1,440.00

*Prices fob Wichita. Attractive time-payment plan available.

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flat storage fumigation
Sure-kill for all grain insects . . . Larvacide! Developed for use with your recirculation system. Free from tolerance. Built-in warning odor. Panobrome, methyl bromide, also available.
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MIDWEST GREEN BANNER DEHY

DEPENDABILITY... in Quality and Service

Flaked Whole Soybeans Considered Good Potential Feed Ingredient

ITHACA, N.Y. — The possibilities of using flaked whole soybeans as a poultry feed ingredient were the subject of a recent Cornell University news release.

When the beans are rolled into thin flakes, chickens can digest 90% of the oil, compared with the usual 70% in unextracted soybeans, the report indicated.

"Soybean oil is considered an excellent source of fat for poultry rations, since it provides more energy to the chicken than any other fat now in use," the release said. "Recent research also shows soybean oil stimulates chick growth. These qualities, plus a decline in soybean oil prices, led Cornell scientists to search for efficient ways of using it in poultry feeds."

The project is currently headed by Dr. M. C. Nesheim of the poultry husbandry department.

Dr. Nesheim noted that the whole soybeans, as in the case of conventional soybean oil meal, must be heat-treated to destroy growth-inhibiting substances. It is not possible merely to grind the beans.

The researcher recalled that the first step in the study of whole soybeans involved a determination of proper heat treatment conditions. These turned out to be much like those necessary in making soybean meal.

However, even when the chickens were fed properly heat-treated soybeans, they did not perform as well as birds that received soybean oil meal with soybean oil added to the diet separately.

"The difference was traced to the fact that the chickens could not digest all of the oil present in the whole soybean," Dr. Nesheim explained. "Only 70% of the oil in the whole soybean was digestible, whereas the chickens could digest 95% when soybean oil was added separately."

The Cornell research has shown chickens can digest more of the oil if the soybeans are rolled into thin flakes similar to corn flakes, a process which seems to disrupt the soybean cells enough to make the oil available to the chick. Experimental chickens were able to digest 90% of the oil in the flaked soybeans.

"Since chicks that eat flaked soybeans perform almost as well as those that get the soybean meal and soybean oil added separately, a new feed ingredient is potentially available for poultry feeding," Dr. Nesheim declared. "Its use will depend on the relative prices of soybean oil, other fats and soybean oil meal. Thus, when economics dictate, the results of this research will help provide flexibility of action in the use of soybeans."

National Hay Assn. Officers Announced

INDIANAPOLIS, IND. — New officers of the National Hay Assn., Inc., including a new secretary-treasurer, have been announced.

Eugene L. Hicks, Plainwell, Mich., succeeds Fred K. Sale as secretary-treasurer of the association. Mr. Sale is retiring.

R. E. Hall, Straughn, Ind., is president, with E. V. Mathews, Woodstock, Va., first vice president and E. L. Kyte, Modesto, Cal., second vice president.

Directors elected for three-year terms were: G. R. Bridge, Chicago; E. J. Kerr, Melvin, Mich., and William E. Ehmann, Snyder, N.Y. Elected for one year were: Raymond F. Rusch, Potter, Wis., and R. S. Penn, Jr., Lexington, Ky.

Central Soya Names Sales Assistant

FT. WAYNE, IND.—Promotion of Douglas G. Fleming to assistant to the general sales manager has been announced by McMillen Feed Mills, a division of Central Soya.

D. G. Fleming

In his new position, Mr. Fleming will assist the general sales manager in the over-all supervision of the feed sales department.

Mr. Fleming joined the company as an assistant territory manager in 1954, following graduation from Michigan State University. From July, 1955, to July, 1958, he was a territory manager in Michigan.

His last assignment was as staff assistant to the director of feed sales in Fort Wayne.

"Mummy," said little Brian, "Percy doesn't know how to swim because his mother won't let him go near the water." "Well, Percy's a good boy," replied mummy. "Yes," answered Brian thoughtfully, "He'll go to Heaven the first time he falls in."

◆ ◆ ◆

A fiery-tempered Southern gentleman wrote the following letter:

"Sir, my stenographer, being a lady, cannot type what I think of you. I, being a gentleman, cannot think it. You, being neither, will understand just what I mean."

◆ ◆ ◆

Two barflies stood at the mahogany bar watching the approach of an old crony.

"I don't know what's happened to Jim lately," said one of them, admiringly. "He's getting quite a spring in his stagger."

◆ ◆ ◆

"Hey," cried Satan to a new arrival, "you act as if you owned this place!"

"I do," came the reply. "My wife gave it to me before I came."

◆ ◆ ◆

Several days after his father died, little Johnny was stopped in the street by a kindly neighbor. "And what were your poor father's last words?" the neighbor asked.

"He didn't have any," Johnny replied. "Mother was with him to the end."

◆ ◆ ◆

"You say typographical errors often bring out the truth?"

"Yes, listen to this item: 'The doctor felt the patient's purse and announced there was no hope.'"

◆ ◆ ◆

Small city girl, touring a dairy farm, learned there were 30 cows for each bull. She commented, "But that's bigamy."

HERE IT IS!

Sudenga BULK FEED BOX

All the Features at an Unmatchable Price!

EXTENSION AUGERS
Clamp on at this point to reach the high ones.
Waterproof Compartments
(Accessory) 3 closed compartments for sacked feeds and supplements.
New 14-Ton Box
Giant delivery unit with 4 compartments, individually operated.
REAR-BUMPER CONTROL
Operator controls mixing, discharge auger, throttle and independent flow from three equal or unequal compartments.
MOUNTED ON YOUR TRUCK
Standard 3-compartment box and available 2-compartment box in 4 and 6 ton capacities or custom built to fit your truck frame. Heavy duty vinyl nylon tarp. Your name painted on sides and back. Now available with hydraulic motor drives.
WALLINGFORD CO-OP ELEV CO
LOW-LEVEL DISCHARGE
Auger unloads into hard-to-get-at bins. Disengages for pit discharge.

UNLOADS ANYWHERE! Deliver bulk feed and grain at rates up to 6 ton in 10-15 minutes into any bin through standard door, window or tight alleyway. Low-level discharge, 270-degree swinging auger, swing spout. Heavy-duty 12-gauge all welded steel construction. Trouble-free operation with extra safety provisions. Choice of flexible shaft drive on discharge auger or new universal with gear-box drive. Complete hydraulic motor drive slightly extra.

$1875

COMPLETE AS SHOWN — mounted on your truck in George, Iowa, ready to go. Slightly higher east of Mississippi.

WRITE FOR LITERATURE OR DEMONSTRATION.

Sudenga INDUSTRIES
SINCE 1888
George, Iowa

STERLING SALT PUTS A PLUS IN YOUR POULTRY FEEDS

Your customers depend on you to provide them with the most complete nutrition program available at an economical price. That's why it's so important to mix Sterling Gold Bond Blusalt with poultry feeds. Gold Bond contains manganese, iron, sulfate sulfur, copper, cobalt, iodine and zinc in amounts scientifically derived to help protect against trace-mineral deficiencies in fast-growing and high-producing poultry. These essential trace-element compounds are blended with high-quality salt, the best carrier for trace minerals as it mixes thoroughly and quickly throughout your feeds. Get guaranteed analysis and tables showing how much Gold Bond to mix with different poultry feeds from your local representative or our nearest district office: Boston, Buffalo, Charlotte, Chicago, Cincinnati, Detroit, Newark, New Orleans, New York, Phila., Pitts., St. Louis. Or write to International at Clarks Summit, Pa.

Service and research are the extras in

STERLING FARM & FEED SALT

INTERNATIONAL SALT COMPANY • CLARKS SUMMIT, PA.

MEMBER AMERICAN FEED afma MANUFACTURERS ASSOCIATION INC

Quality is something we insist on, persist in. That's why we use the most modern equipment under strict quality controls in processing the world's finest granite. The results: sharp, clean, sparkling Graniteeth—the grit that puts the bite in the bird. Graniteeth builds up the gizzard, strengthens it, gives it tremendous muscular power—putting more meat on the bones, more eggs in the crate. Use Graniteeth and you'll see profitable results in a hurry. The birds never had it so good!

YOU'VE GOT TO HAVE CLASS!

P. S. We still have a few Graniteeth face masks left over from this summer's Memphis convention. The kids love them. If you'd like one, drop us a line and we'll send it right out to you.

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IDAHO FEED FIRM—The Peterson Feed & Supply Co. in Burley, Idaho, has a general business that services all areas of livestock feeding. About half of the total business involves the sale of dairy feed, however, since the Peterson brothers operate a dairy heifer feeding program along with their business.

Dairy Heifer Program Helps Idaho Dealer Boost Sales

By Jess Blair
Feedstuffs Special Writer

A plan to feed and raise heifers for dairy customers has paid nice dividends to the Peterson Feed & Supply at Burley, Idaho.

Harold and Oscar Peterson, brothers and partners in the business, have been in business several years—but their heifer boarding house has been in existence only since 1957.

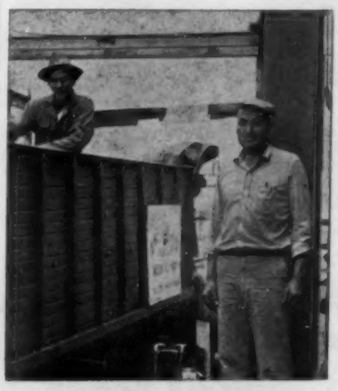
Under this plan, they take good grade heifer calves at six weeks of age and feed and care for the animals at the company's feeding pens until the heifers are within six weeks of calving. The owners of the calves are charged retail prices for the actual feed used and pay the Peterson company $25 per head for labor and handling charges.

"It created a lot of interest right from the start," said Harold Peterson. "We wanted to prove that good feed and care would help a calf become a better milk cow."

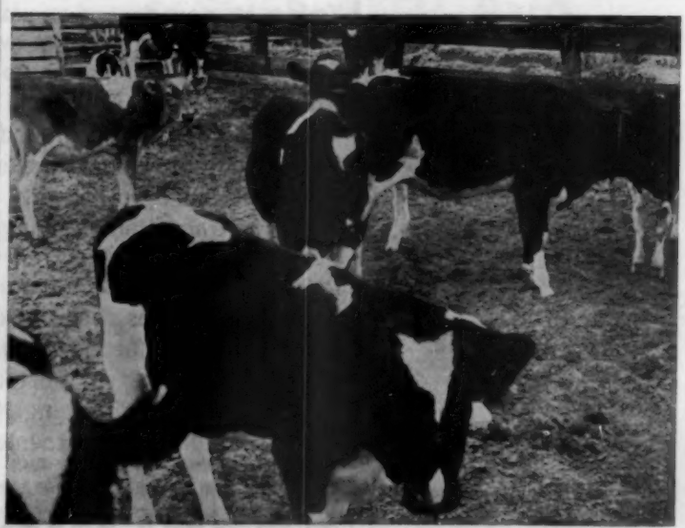
Usually, the Petersons have their pens filled, which means caring for from 38 to 40 animals. Most of the calves come from the dairy customers near Burley. A few who have been well pleased with the results of "farming out" the calves have told others. Now, the Petersons usually have no difficulty in keeping the pens filled.

One man checked the Petersons by keeping at home a calf of the same age, breed and size as one he loaned to the feed company. At breeding time, he found that the calf he raised at home weighed 150 lb. less than the one he sent to the Petersons' feeding pens.

Another project located on the



LOCAL GRAIN—Much of the grain used in the feed mill is purchased locally. Above, Harold Peterson, co-owner, supervises the unloading of a truck.



HEIFER PROJECT—Here are some of the high-quality heifers being boarded at the Peterson feedlot. Heifers are accepted at six weeks of age and kept until they are within six weeks of calving. Owners of the calves are charged retail price for feed consumed by their calves plus a flat $25 per head for labor and handling charges.

same acreage is devoted to raising brood sows. The owners built pens and a 10-unit farrowing house. They usually keep about 16 to 18 brood sows on hand. The gilts are kept till weaning time then sold to customers for future brood sows. Some of the males are sold for breeding stock, and the rest are fed out and sold on the market.

The twin projects are nearly always one of the stopping points for FFA, 4-H Club and other organizational tours. Now, hardly a day passes without one of the brothers taking a group of visitors down to the feeding pens.

"We got into this thing without much planning," said Harold Peterson. "A customer owed us a debt but didn't have any money. He did have some poles, though, and offered these as payment. It was then we decided upon the heifer project. Later, we started the hog operation."

The firm not only cashes in on livestock and feed sales, but also uses the pens to demonstrate good dairy and swine equipment. All of this is sold in the store, and quite often some farmers are more inclined to buy after seeing them in actual use.

The Peterson brothers have been selling more dairy feed than any other kind, but they do run a general feed business. Their customers include many dairies, some poultry owners with flocks up to 7,000 birds, beef cattle feeders who keep from 200 to 500 steers and one or two broiler growers.

"We would rather have three small feedlots trading with us than one large one," said Mr. Peterson. "The small owner will buy something from us, but the big fellow puts in his own mill, buys all the ingredients from the cheapest place, and we end up selling him nothing."

The company went into an expansion program about three years ago. The Petersons added new milling equipment, 6½-ton bulk truck and began stressing the mixing of feeds that utilize the farmer's own hay and grain.

In 1956, the firm had sold more dairy feed than any of the 150 outlets in the Northwest division of their supplier's firm. They increased this by 250 tons the next year, then added 250 tons to the total in 1958, and finally increased it an additional 400 tons in 1959.

"This year, we will easily exceed last year's total," said Mr. Peterson. "Altogether we have had a 300% increase over a few year ago, and I'd say that at least half of it was caused by our heifer project."

The Petersons wanted to build up their general farm trade but found that some farmers would not take the trouble to haul their grain or hay to town for grinding and mixing. So, they bought a Daffin mobile mill to take care of these customers.

"We've only been doing this a short while, but the machine is busy most of the time," said Harold Peterson. "One curious thing about this is that we spent six or seven years trying to get customers to come to us. Now, with this portable mill, we are going to them."

The main mill is semi-automatic. Feed ingredients are brought in both by truck and by rail. Some of the grain is ground, though much of it destined for the dairies is rolled. Quite a lot of sacked feed is sold, although the trend is now toward bulk handling.

The firm delivers both bulk and sack feed to customers, and charges transportation only for small loads. For the big orders, there is no charge unless the customer lives a long way from town.

In dividing the duties of management, the owners have worked out an agreement giving Oscar and his sons the care of the feeding projects. Harold does most of the feed buying.

In addition to the owners, the firm has five employees. Four are used at the mill and in the operation of the portable unit. The fifth man makes feed deliveries. The Petersons do all the field work, which includes farm visits, helping with management problems and contacting potential customers.

"We have tried to grow steadily but not too fast," said Harold. "Too much expansion means heavy financing, and we wanted to avoid this. We find that feed credit must be extended, but thus far we have not loaned money for new buildings or for the expansion of herds and flocks."

The firm is now a dealer for a well-known brand of milking equipment, which fits in profitably with the dairy business. The farm store also handles livestock and poultry equipment, sells baby chicks in season and handles a few garden items.

The main business, however, is the mixing and sale of feeds, with dairy feeds making up about 50% of the volume. The other 50% is about equally divided among beef cattle, hogs and poultry.

Lamb feeding is also a growing industry in the Snake River Valley, so the Petersons are not overlooking it. As Harold Peterson says, "It doesn't pay to overlook a customer, no matter how small he is, because this man will buy something every month of the year."

HOG OPERATION — Peterson Feed & Supply also includes a hog operation. The Peterson brothers keep from 16 to 18 brood sows on hand and raise and sell breeding stock to local hog growers.

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Convention Calendar

Sept. 28-29 — Ohio Poultry Assn.; Yough Bldg., Ohio State Fairgrounds, Columbus, Ohio; sec., Bruce R. Davisson, Poultry Dept., Ohio State University, Columbus.

Sept. 29 — Vermont Feed Dealers and Manufacturers Assn.; University of Vermont, Burlington; sec., D. C. Henderson, Hills Agricultural Science Bldg.

Sept. 29-30 — Iowa Seed Dealers Assn.; Savery Hotel, Des Moines; sec., Bob Skinner, 401 Shops Bldg., Des Moines 9.

Sept. 30 — Nebraska Feed and Nutrition Conference; University of Nebraska College of Agriculture, Lincoln; chm., Dr. John L. Adams, Poultry Husbandry Dept.

Oct. 2-4 — Poultry Industries of Louisiana, Inc.; Bellemont Motor Hotel, Baton Rouge; sec., Clyde Ingram, Knapp Hall, Louisiana State University, Baton Rouge.

Oct. 4-5—Washington Junior Poultry Exposition; Western Washington fairgrounds, Puyallup, Washington; W. R. Jenkins, Extension Poultry Specialist, Agricultural Extension Service, Washington State University, Pullman.

Oct. 4-6 — Northeastern Poultry Producers Council Exposition and Convention; War Memorial Auditorium, Syracuse, N.Y.; sec., Richard I. Ammon, 10 Rutgers Place, Trenton 8, N.J.

Oct. 5-7—Texas Nutrition Conference, Texas A&M College, College Station; chm., Dr. J. R. Couch, Department of Poultry Science.

Oct. 11-13—Virginia State Poultry Federation; Hotel Roanoke, Roanoke, Va.; sec., Paul Williams, 615 East Franklin Street, Richmond 19.

Oct. 12-13 — Association of American Feed Control Officials Annual Meeting; Shoreham Hotel, Washington, D.C.; sec., Bruce Poundstone, Feed and Fertilizer Dept., Agricultural Experiment Station Bldg., University of Kentucky, Lexington.

Oct. 13-14 — Turkey Short Course and Jr. Market Turkey Show; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Oct. 16-18—Kentucky Poultry Federation and Kentucky Poultry Improvement Assn.; Kentucky Hotel, Louisville; John W. Tuttle, field manager.

Oct. 16-20 — Business Management Program; sponsored by the Southeastern Poultry & Egg Assn., University of Georgia, Athens; sec., Harold E. Ford, 235 East Ponce de Leon Ave., Decatur.

Oct. 17-18—California Animal Industry Conference; Fresno Memorial Auditorium, Fresno, Cal.; co-sponsored by California Hay, Grain & Feed Dealers Assn. and University of California; chm., Bert Maxwell, Nulaid Farmers Assn., Petaluma; association office, 1400 Tenth St., Sacramento 14.

Oct. 19-21—International Symposium on Animal Nutrition; Madrid, Spain; Geo. M. Strayer, Exec. Vice Pres., American Soybean Assn., Hudson, Iowa.

Oct. 20-21 — Alabama Nutrition Conference; Auburn University, Auburn, Ala.; sec., Alabama Feed Assn., George R. Ingram, P.O. Drawer 500, Cullman, Ala.

Oct. 20-21 — West Virginia Feed Dealers Assn.; Blackwater State Park, Thomas, W. Va.; J. Z. Ellison, 801 Willowdale Rd., Morgantown.

Oct. 20-21 — Cooperative G.L.F. Exchange, Inc.; stockholders annual meeting; Onondaga War Memorial Bldg., Syracuse, N.Y.

Oct. 20-21—Poultrymen's Institute; Washington State University, Pullman; W. R. Jenkins, Extension Poul-

New Listings

For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear separately from ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.

Oct. 12 — Animal Nutrition Research Council; Shoreham Hotel, Washington, D.C.; sec., Dr. Philip Derse, Wisconsin Alumni Research Foundation, 506 N. Walnut St., Madison 5, Wis.

Dec. 2-3—Western Quickie Convention; Disneyland Hotel, Anaheim, Cal.; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 6-7—Cornell Poultry Servicemen's Clinic; Cornell University, Ithaca, N.Y.

Dec. 7-8—Midwestern Quickie Convention; Conrad Hilton Hotel, Chicago; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

Dec. 8-9—Eastern Quickie Convention; Ben Franklin Hotel, Philadelphia; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas City 10, Mo.

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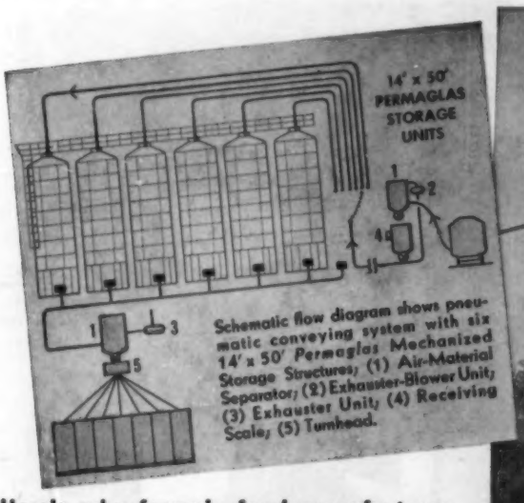
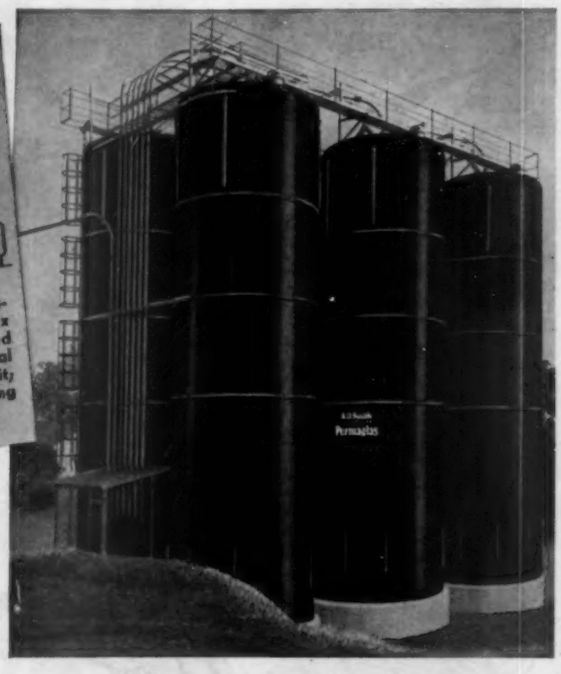
July 18-20—American Poultry Congress & Exposition; Municipal Auditorium, Minneapolis; Don M. Turnbull, sec., American Poultry & Hatchery Federation, 521 E. 63rd St., Kansas city 10, Mo.



Schematic flow diagram shows pneumatic conveying system with six 14' x 50' *Permaglas* Mechanized Storage Structures; (1) Air-Material Separator; (2) Exhauster-Blower Unit; (3) Exhauster Unit; (4) Receiving Scale; (5) Turnhead.



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Oct. 23-25 — Southeastern Feed Production School; University of Georgia, Athens; Harold E. Ford, Southeastern Poultry & Egg Assn., 235 East Ponce de Leon Ave., Decatur, Ga.

Oct. 25-26—Nebraska Poultry Improvement Assn.; National Guard Armory, Lincoln, Neb.; sec., Doyle H. Free, Poultry Husbandry Bldg., University of Nebraska, Lincoln.

Oct. 25-26 — Indiana State Poultry Assn.; Purdue Memorial Center, Purdue University, Lafayette; sec., Robert L. Hogue, Poultry Science Bldg., Purdue.

Oct. 27-28—National Swine Industry Conference; University of Kentucky, Lexington.

Oct. 27-28 — Washington Poultry and Hatchery Assn.; Chinook Hotel, Yakima.

Oct. 27-29—National Swine Industry Conference; University of Kentucky, Lexington, Ky.; chm., Keith Myers, Secretary, National Swine Growers Council, Box 241, Grundy Center, Iowa.

Oct. 28—Illinois Sheep Day; University of Illinois, Urbana; chm., Dr. U. S. Garrigus, Animal Science Dept.

Nov. 2-3 — Kansas Poultry Assn.; Broadview Hotel, Wichita; sec., Harry J. Reed, Box 663, Manhattan.

Nov. 2-3 — Illinois Feed Assn.-Illinois Poultry & Hatchery Federation, joint convention; Springfield, Armory, Springfield; sec., IFA, Dean M. Clark, 141 W. Jackson Blvd., Chicago 4; sec., IPHF, Aubrey Harless, Shelbyville, Ill.

Nov. 3—South Dakota Swine Research Day; South Dakota State College, Brookings.

Nov. 3-4 — Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Dr. H. H. Williams, Biochemistry and Nutrition Dept., Savage Hall, Cornell University, Ithaca, N.Y.

Nov. 9-12 — National Renderers Assn.; Statler-Hilton Hotel, Dallas, Texas; sec., Miss Jamie Fox, 30 N. LaSalle St., Chicago, Ill.

Nov. 14-15 — Washington Animal Industry Conference; Skagit Valley College, Mount Vernon, Wash.; John G. Wilson, mgr., Washington State Feed Assn., 814 Second Ave. Bldg., Seattle 4.

Nov. 16-17—Missouri Poultry Improvement Assn.; Hotel Continental, Kansas City; sec., E. M. Funk, Columbia, Mo.

Nov. 16-18 — Florida Nutrition Conference; University of Florida, Gainesville; chm., Dr. J. P. Feaster, Animal Husbandry and Nutrition Dept.

Nov. 17-18 — Liquid Feed Assn.; Kansas City; Jack von Mettenheim, Princeton, Ill.

Nov. 20-22—Western Grain & Feed Assn. of Iowa; Fort Des Moines Hotel, Des Moines, Iowa; sec., Bob Skinner, 401 Shops Bldg., Des Moines 9.

Nov. 25-26 — American Society of Animal Production; Hotel Sherman, Chicago, Ill.; sec., Clair E. Terrill, Animal Husbandry Research Division, Agricultural Research Center, Beltsville, Md.

Dec. 1-2 — North Carolina Animal Nutrition Conference; North Carolina State College, Raleigh; chm., Dr. J. W. Kelly, Poultry Science Dept.; co-sponsored by North Carolina Feed Manufacturers Assn., sec., McNair Evans, Box 44, Mocksville.

Dec. 6-7 — North Dakota Turkey and Egg Convention; Fargo Civic Center Auditorium, Fargo, N.D.; sec., Irving J. Mork, Fargo.

Dec. 8 — Arizona Grain and Seed Assn.: Westward Ho Hotel, Phoenix; sec., Willis F. Nielson, Box 787, Mesa, Ariz.

Dec. 12-13 — Midwest Veterinary Nutrition Conference; Continental Hotel, Kansas City; Lloyd Larson, Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

Dec. 13-15 — Minnesota Poultry Hatchery Assn.; Hotel Radisson, Minneapolis, Minn.; sec., L. L. Baumgartner, Litchfield, Minn.

1961

Jan. 4-6—National Turkey Federation; Conrad Hilton Hotel, Chicago, Ill.; sec., M. C. Small, P.O. Box 69, Mt. Morris, Ill.

Jan. 12-13—Michigan Feed & Grain Dealers Assn.; Michigan State University, Kellogg Center; sec., Nevel Pearson, P.O. Box 472, East Lansing.

Jan. 15-17—Indiana Grain & Feed Dealers Assn.; Claypool Hotel, Indianapolis; sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis 4.

Jan. 16-17—Northwest Retail Feed Assn.; Hotel Pick-Nicollet, Minneapolis; sec., W. D. Flemming, 112 Grain Exchange Bldg., Minneapolis, Minn.

Jan. 23-25—Farmers Grain Dealers Assn.; Civic Memorial Auditorium, Fargo, N.D.; sec., Lloyd C. Hanson, 513 Black Bldg., Fargo.

Jan. 23-25 — Southeastern Poultry & Egg Assn.; Municipal Auditorium, Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.; for reservations: Atlanta Convention Bureau, Rhodes-Haverty Bldg., Atlanta.

Jan. 27 — Missouri Turkey Day; University of Missouri, Columbia; E. M. Funk, sec., Missouri Poultry Improvement Assn., Poultry Bldg., Box 568, Columbia.

Jan. 31-Feb. 1 — Hoosier Turkey Trot; Purdue Memorial Union, Purdue University, Lafayette, Ind.; John N. Howell, Turkey Department, Indiana State Poultry Assn., Poultry Bldg., Purdue University.

Feb. 2-3—Oregon Animal Nutrition Conference; Withycomb Hall, Oregon State College, Corvallis.

Feb. 3-4—Minnesota Turkey Growers Assn.; Leamington Hotel, Minneapolis; sec., Roy Munson, 2200 University Ave., St. Paul, Minn.

Feb. 6-7—Montana Nutrition Conference; Montana State College, Bozeman; chm., Dr. O. O. Thomas, Animal Industry and Range Management Dept.

Feb. 7-10 — American Dehydrators Assn.; Jung Hotel, New Orleans, La.; executive vice president, Joseph Chrisman, 430 Board of Trade Bldg., Kansas City 5, Mo.

Feb. 8-9—Pacific Northwest Feed Mill Production School; Hotel Leo-

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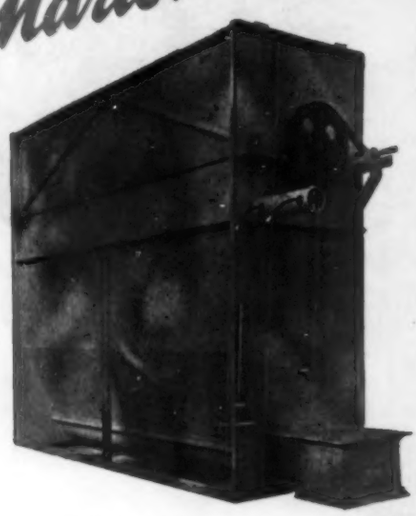

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GROUP WARNS AGAINST 'GUARANTEES'

SACRAMENTO, CAL. — The California Hay, Grain & Feed Dealers Assn. is continuing to urge feed men not to sign any guarantees that their feed does not contain pesticide residues. The association notes that the industry still is often being asked to sign guarantees on feed, especially that sold as dairy feeds. Although urging feed men not to sign guarantees, the association told them "not to forget your responsibility to your customer and to the law that you must not sell any contaminated feed."

The association says that it was recently found that a dairy concentrate was analyzed which was far in excess of the 0.5 p.p.m. allowed by law.

"We, as an industry, must do everything possible to clean up our feeds or some of us may 'lock horns' with either state or federal laws," said the association. "Under both the state and federal law, the feed may be seized, plus the fact that the state may fine a person in violation not more than $100 for the first violation and not less than $100 on subsequent violations. The federal laws are more strict in that they may fine a violator from $1,000 to $10,000 plus one to three years imprisonment. For the time being, we have to live with the laws, so let's make the best of it."

pold, Bellingham, Wash.; sponsored by Washington State Feed Assn.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10 — Washington State Feed Assn., annual convention; Hotel Leopold, Bellingham, Wash.; mgr., John G. Wilson, 814 Second Ave. Bldg., Seattle 4.

Feb. 10-11—Poultry Fact Finding Conference; sponsored by Institute of American Poultry Industries; pres., Harold M. Williams, 59 E. Madison, Chicago 2.

Feb. 19-21—Midwest Feed Manufacturers Assn.; Hotel Muehlebach, Kansas City, Mo.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Feb. 19-21 — Ohio Grain & Feed Dealers Assn.; Neil House, Columbus; sec., George G. Greenleaf, 5625 N. High St., P.O. Box 121, Worthington.

March 8 — Distillers Feed Conference; Sheraton Gibson Hotel, Cincinnati, Ohio; L. E. Carpenter, Executive Director, Distillers Feed Research Council, 1232 Enquirer Bldg., Cincinnati 2.

March 16-17—Oregon Feed & Seed Dealers Assn.; Sheraton-Portland Hotel, Portland; mgr., Russ Hays, 702 Lewis Bldg., Portland 4.

March 16-17 — Maryland Nutrition Conference; Shoreham Hotel, Washington, D.C.; chm., Dr. R. D. Creek, Poultry Husbandry Dept., University of Maryland, College Park.

March 20-24—Grain & Feed Dealers National Assn.; Washington D.C.; sec., Herbert L. Sharp, 400 Folger Bldg., Washington 5, D.C.

April 3-4 — National Institute of Animal Agriculture; Purdue University, Lafayette, Ind.; sec., Karl D. Butler, P.O. Box 521, First National Bank Bldg., Ithaca, N.Y.

April 10-12—Poultry & Egg National Board; Sheraton Towers Hotel, Chicago, Ill.; mgr., Lloyd H. Geil, 8 S. Michigan Ave., Chicago 3.

April 20-22—California Hay, Grain & Feed Dealers Assn.; Jack Tar Hotel, San Francisco; sec., Leo L. Johnson, Blue Anchor Bldg., 1400 10th St., Sacramento 14.

April 27-29—Kansas Grain & Feed Dealers Assn.; Broadview Hotel, Wichita; sec., Orris E. Case, 609 Wiley Bldg., Hutchinson.

May 7-10—American Feed Manufacturers Assn. Convention and National Feed Show; Conrad Hilton Hotel, Chicago, Ill.; sec., W. T. Diamond, 53 West Jackson Blvd., Chicago 4.

June 8-11 — Canadian Feed Manufacturers Assn.; National Convention; Manoir Richelieu, Murray Bay, Quebec; national secretary, W. N. Hendrick, 2901 Bloor St. W., Toronto 18, Ont.; for registrations, T. G. Sevigny, Room 100, 355 McGill St., Montreal 1, Quebec.

Aug. 24-26 — North Carolina Feed Manufacturers Assn.; Virginia Beach, N.C.; sec., McNair Evans, Box 44, Mocksville.

Oct. 22-24—Midwest Nutrition Conference; Hotel Muehlebach, Kansas City, Mo.; sponsored by Midwest Feed Manufacturers Assn.; executive vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

CALENDAR FOR 1960-61

SEPTEMBER

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Aug. 13-18—12th World's Poultry Congress; Show Grounds of the New South Wales Royal Agricultural Society, Sydney, Australia; Dr. Cliff D. Carpenter, chairman, U.S. Participation Committee, 1207 Emerald Bay, Laguna Beach, Cal.; Dr. A. William Jasper, secretary, c/o AFBF, 2300 Merchandise Mart, Chicago 54, Ill.

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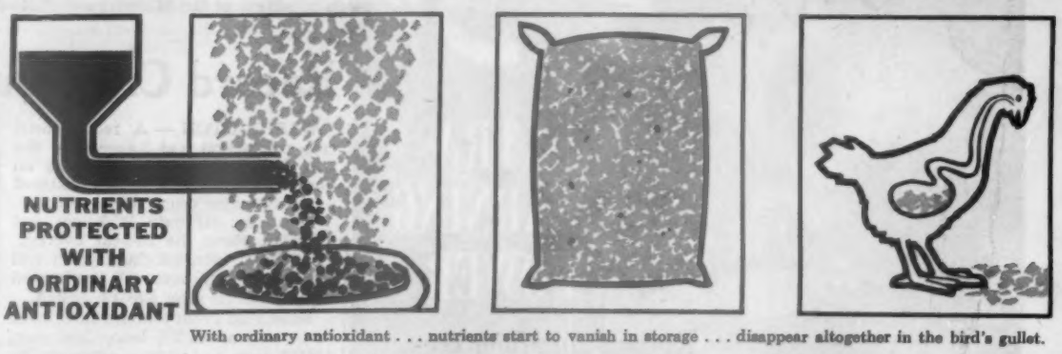

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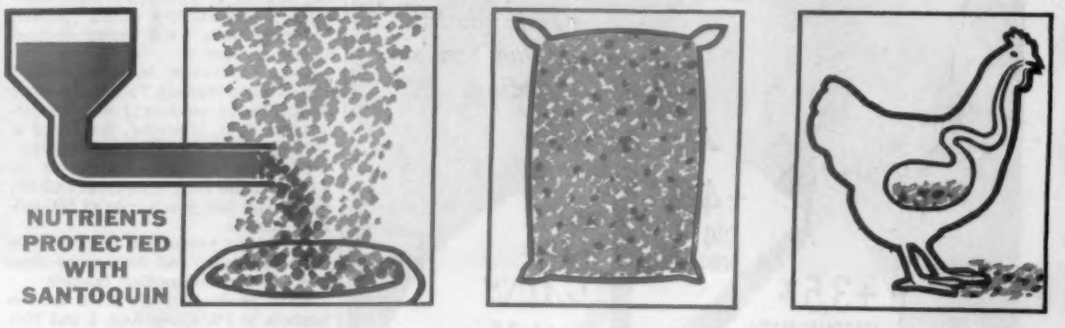

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Preserves carotenes	No	Yes
Improves pigmentation by guarding xanthophylls	No	Yes
Acts in the bird like vitamin E to prevent diseases	No	Yes

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- ☐ "Question and Answer" brochure on Santoquin
- ☐ Names of premixers supplying Santoquin
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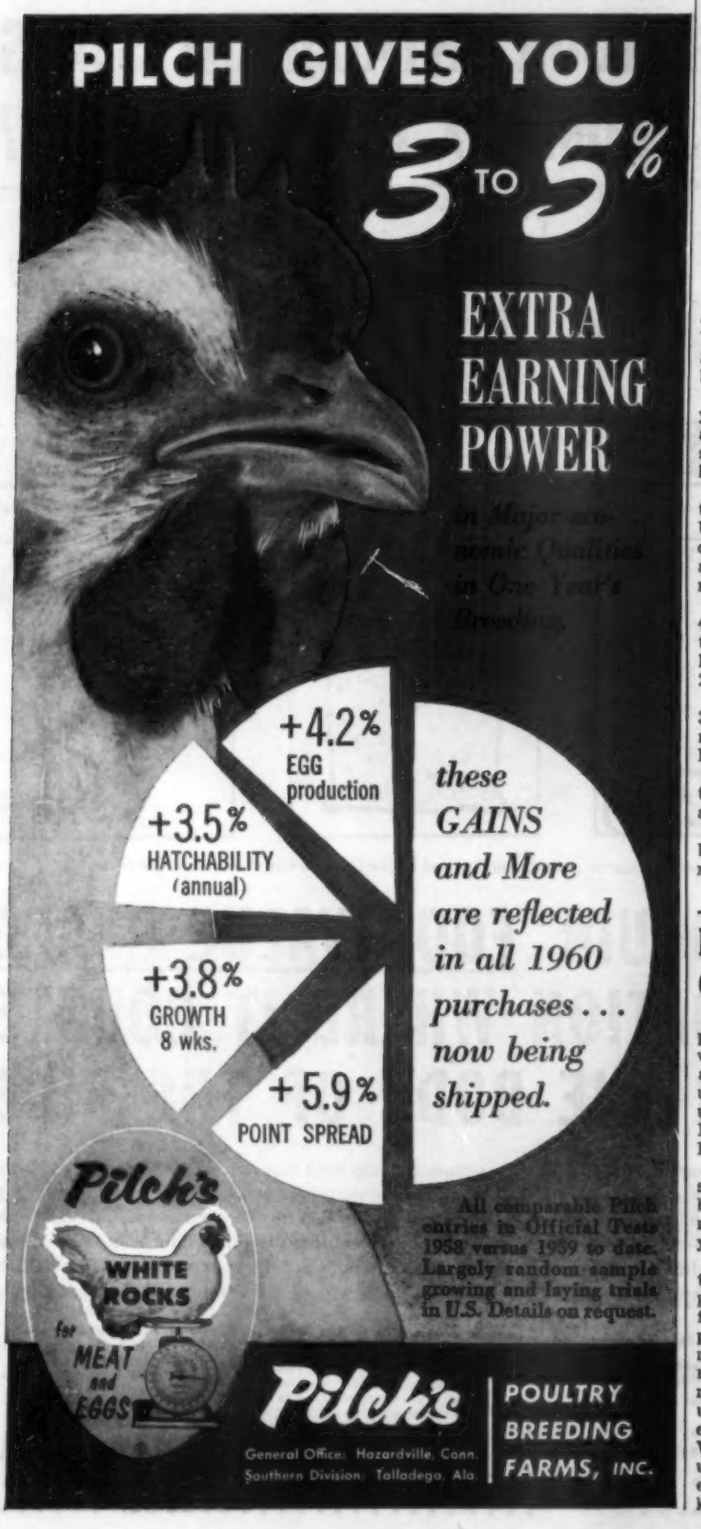
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AGRI-BUSINESS CAREERS—A slide-tape recording presentation describing the many opportunities for careers in agriculture and agri-business was discussed by this group at a recent meeting at the University of Missouri. The presentation is being assembled by the Midwest Feed Manufacturers Assn. and the Missouri Grain and Feed Assn., in cooperation with the College of Agriculture at the University of Missouri. When completed, the material will be given by feed dealers at local school and community meetings. Men attending the meeting to help plan the promotion of jobs in, or related to, agriculture include, from left: Sam B. Shirky, associate dean of agriculture, University of Missouri; Larry Alley, Pay Way Feed Mills, Inc., Kansas City; Elmer R. Kiehl, dean of agriculture, University of Missouri; Curtis Carter, Carter Milling Co., Odessa; and Lloyd Larson, executive vice president, MFMA, Kansas City. Mr. Alley is vice president of the MFMA and Mr. Carter is president of the Missouri association.

Record Crop Output Now Seen

WASHINGTON — A record total crop production was foreseen by the U.S. Department of Agriculture on Sept. 1 as a result of gains registered by most major crops during August.

The corn estimate is below last year but above the 10-year average, and wheat, oats, sorghum grain and soybean totals are all estimated higher than a year ago by USDA.

Total feed grain tonnage now looks to be only about 2% below last year, USDA says, as sorghum prospects increased substantially during August, and corn, oats and barley showed modest increases.

Corn production is estimated at 4,182 million bushels. This is 2% more than forecast on Aug. 1 and 4% below last year. However, the figure is 28% more than the 10-year average.

Soybeans for bean output is up 3% from the Aug. 1 forecast and 5% more than last year's crop at 566 million bushels.

All wheat production is 21% more than last year and 25% more than average at 1,368 million bushels.

Oats production, at 1,178 million bushels, is 1% above Aug. 1 and 10% more than last year.

Sorghum grain estimate climbed 10% from Aug. 1 to 591 million bushels. This was 2% more than last year on Sept. 1.

Hay production prospects improved in all regions during August to bring the estimate to 117.4 million tons. This is 4% more than last year's production.

Flaxseed production is estimated slightly above the Aug. 1 forecast at 29.9 million bushels. However, this is nearly a third larger than last year.

Pastures were in better than average condition in all regions except the West on Sept. 1.

Replacer for Veal Calves Announced

MINNEAPOLIS—A new milk replacer formulated to finish veal calves without feeding whole milk has been announced by National Vitamin Products Co., Minneapolis. The new product has been introduced in Wisconsin, Minnesota, Michigan, Iowa and the Dakotas.

Herbert Tessereau, sales manager, said National Vitamin Products has been conducting experiments on the new product for approximately three years.

"There is an excellent market for top quality veal all over the country, primarily because very few dairymen feel it is economically possible to properly finish veal calves on whole milk," Mr. Tessereau said. "Our experiments have been directed toward a milk replacer that will fatten calves up to the 200-lb. range in seven to eight weeks without using whole milk. We feel confident that this new product, Calvita Vealer, can produce an extra $20 profit on each calf marketed."

Corn Research May Aid Broiler Industry

STATE COLLEGE, MISS.—Dwarf corn for easier harvest and yellower corn for better broiler feed are among the objectives of the joint U.S. Department of Agriculture experiment station corn breeding program being conducted at Mississippi State University.

High yields are recognized as the first objective of corn improvement programs. Breeding dwarf varieties is desirable for easier harvesting and fewer lodging problems.

The research being conducted to locate better varieties of corn is also important. A few adapted lines have been found that are high in xanthophyll, the pigmenting substance broilers need to give them a desirable yellow color. Some of these lines have in excess of 40 parts per million xanthophyll.

This is equal to that of known, but unadapted, high xanthophyll strains. Further tests are being made now, and will contribute much toward development of valuable hybrids for use in the broiler industry if the content of the adapted lines remains reasonably constant, according to Dr. C. O. Grogan, U.S. Department of Agriculture agronomist at Mississippi State College.

PROMOTION TOLD

MEDFORD, ORE.—Robert A. Arlandson, assistant manager of Albers Feed & Farm Supply at Albany will assume a similar position with the firm's local branch, reports Carl O. Monson, Albany manager. Lyle Potter of Eugene will assume Mr. Arlandson's duties at Albany. Mr. Arlandson has been with the Albany store for six years. Mr. Potter has been employed at the Eugene store for the past year.

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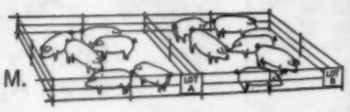
Putting Research To Work



BY SPENCER H. MORRISON, PH.D., D. V. M.

Brief Summary of Certain Reports from the Annual Kentucky Livestock Field Days—Part 2

NUTRITION SECTION: Copper deficiencies have been reported from several areas of the U.S., and most particularly in Florida on sandy soils and certain muck soils. In Florida, the deficiency of copper is also often related to concurrent deficiencies of iron and cobalt. Deficiency of copper has been suspected in other regions, but relatively little proof for its existence has been shown. It is therefore interesting to note that the Kentucky workers have studied the liver copper content of steers for two years when grazing either brome-ladino, bluegrass-white clover or birdsfoot trefoil-bluegrass pastures.

The average mean liver copper content (ppm.) for the respective pastures was as follows: 126.3, 69.5, and 50.7. Since 50-75 ppm. is considered to indicate possible deficiency, it was shown that under normal grazing conditions in the central bluegrass area of Kentucky, copper deficiencies can exist.

In another experiment supplementation of grazing animals with copper sulfate did not have any visible effects, but it was noted that in this trial forage copper levels were lower and forage molybdenum levels were higher than normal. Possibly, this might have had some effect on results of copper supplementation.

Hygromycin A added to a basal wether lamb ration of ground corn cobs (50), hydrol, red dog flour, ground corn, soybean oil meal, salt, limestone, potassium iodide, cobalt sulfate and vitamins A and D, at the rate of 5 mg./lb. of feed significantly increased the average daily gains (5% level of probability) and efficiency of feed conversions (5% level). Part of the results can be explained by the fact that the antibiotic fed lambs consumed 13% more feed and there was a significant correlation between gain and feed intake. Hygromycin A also improved the digestibility of the basal ration.

SHEEP SECTION: Two years work has been completed by Woolfolk and Boyd to study the effect of shearing ewes just prior to breeding on their subsequent performance. The results have indicated that Montana ewes which were sheared lambed earlier that unsheared ones. On the other hand, Texas bred ewes showed no such effect. In the Montana ewes there was a tendency for the lambing season to be spread out over a longer period of time and in two out of three groups of Montana ewes, the lambing percentage was increased by shearing. Shearing, therefore, appears to have some benefit for improving breeding performance of Montana ewes, but based on their data the Kentucky researchers state that "it cannot be justified on the basis of increased wool yield to offset the cost of extra shearing." But, since on many markets, earlier lambs sell for a higher price, the practice might be justified. Due to the differences observed between ewe types, emphasis should be given to selection for early lambing as well as for ability to produce fast-gaining lambs.

The same workers reported on the final results of silage rations for pregnant and lactating ewes. Six lots of pregnant crossbred western ewes of Texas and Montana origin were fed in drylot in a comparison of corn silage and three alfalfa-brome silages preserved with 150 lb. of cracked corn, or 8 lb. of sodium bisulfite, or one pound of Silo Joy (Flavor Corp. of America) per ton of green forage, and a standard hay and grain ration. Silage was fed in all lots at the maximum consumption level. All lots had access to bone meal and phenothiazine-trace mineralized salt. The lambs had free access to a creep mixture consisting of 87 lb. of cracked corn, 12 lb. of linseed meal pellets, and 1 lb. of Aureomycin crumbles from Feb. 4 until March 26, when ewes and lambs of all lots were placed together on bluegrass pasture.

The differences among ewe weights, fleece weights, birth weights, and 28-day weights of single lambs were not significant. In a comparison of corn preserved alfalfa-brome silage, the

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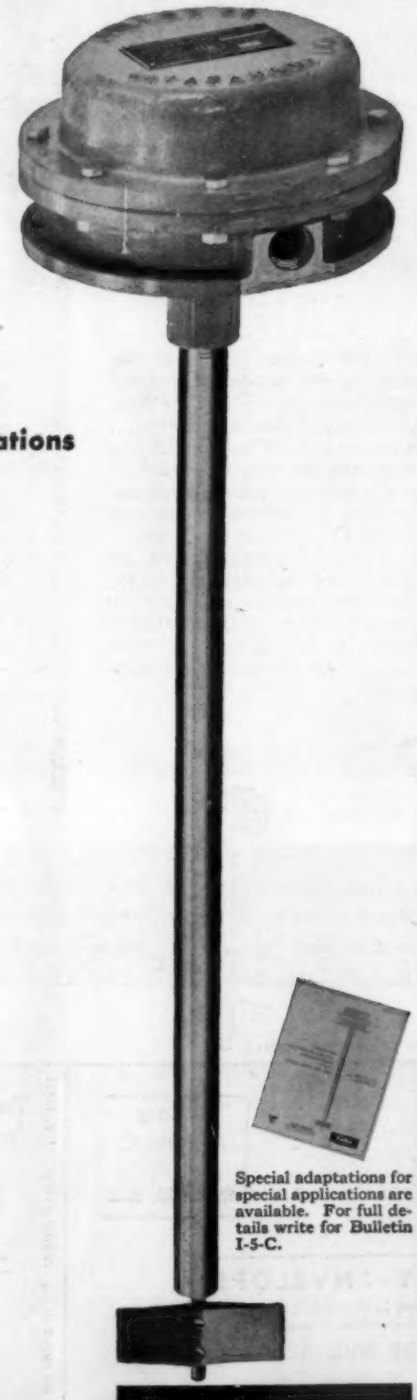

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lot of ewes fed normal grain performed significantly better than those fed a low grain ration. Control alfalfa hay ration resulted in heavier weights at 100 days for both twin and single lambs over the silage rations. The lambs appeared to be thriftier on the hay ration and consumed nearly twice as much creep ration as the next highest lot. However, gains among the lots were not in direct relationship to creep feed consumption. Ewes on the corn silage ration maintained their own liveweight quite well, but evidently did not milk so well as either the control hay lot or at least two of the silage lots. In this experiment, consumption of silages was not high enough to bring total dry matter consumption up to the level of that secured in the alfalfa hay fed group.

Two creep feed trials were reported to the field day visitors by the Kentucky sheep investigators. The first was a preliminary report on complex creep rations for lambs. The second, was field station trial of creep feeding with lambs conducted at Princeton, Ky.

In the first investigation of creep rations, four different lots were treated as follows: Lot 1—Control, no creep; Lot 2—simple creep mixture, 87.5% cracked corn, 10% soybean meal and 2.5% Aureomycin crumbles; Lot 3—complex creep ration, 55% cracked corn, 30% soybean oil meal, 5% sugar, 5% alfalfa meal, 2.5% Aureomycin crumbles, 1.5% bonemeal, and 1% trace mineralized salt; Lot 4—Same as Lot 3, except that lambs weaned and continued on feed on same ration in the barn at the time the other lots were placed on pasture. Ewes in all lots were fed the same standard alfalfa hay-corn ration during the drylot phase with all lots having free access to phenothiazine-trace mineralized salt, bonemeal and water. Ewes were allotted on Dec. 17 and creep feeding was begun on Jan. 26 after enough lambs had been dropped from each lot to utilize the creep mixtures. The drylot phase of the trial ended on April 8, and the pasture phase was still in progress at the time of the reporting, so that only preliminary figures were available.

The preliminary results showed that creep feeding increased gains as indicated by both the 56 and 100 day lamb weights. The complex creep fed lambs outperformed the other group fed the simple mixture, but no definite conclusions can be drawn until the conclusion of the experiment in all its phases.

In the Princeton field trial the lambs were divided into two groups as follows: Lot 1—Control, no creep, and Lot 2—Lambs creep fed a mixture of 90% cracked yellow corn and 10% soybean oil meal including antibiotic. Lambs not sold before weaning on July 11 were held on pasture and finished on feed in the fall.

The results showed that creep fed lambs made slightly faster gains up to 56 days of age (creep fed: singles—46 lb., twins 38.7 lb.; no creep: singles—44.9 lb., twins—38.4 lb., average 56-day weights) and a larger percentage (54%) graded prime than in the no-creep fed group (30%). However, this difference in grade was not reflected in sufficiently increased selling price to offset the cost of the creep feed. Creep-fed lambs moved to market slightly faster than non-creep-fed lambs, but here again there was not enough difference in the early and late market to offset the creep cost. There was a rather definite indication that creep-fed lambs failed to continue to gain (0.18 lb. average daily gain) after weaning as well as the no-creep lambs (0.23 lb.). This suggests the advisability of continuing creep-fed lambs on feed after weaning rather than holding until fall to finish as was done in this experiment. Similar observations have been made with beef calves which are creep fed by some workers and the methods of finishing creep fed animals certainly deserve further investigative work.

Further trials at the Kentucky station have shown that phenothiazine may be of little value for resistant strains of sheep nematodes. Ruelene, although not commercially available, has given indications of being an effective anthelmintic agent for some of the more serious internal parasites of sheep.

SWINE SECTION: The swine group at Kentucky has been investigating the effect of various feed additives, especially those belonging to the nitrofuran group, with not only growing and finishing swine, but also with brood sows. The results of these

TEST COMPARES HENS ON FLOORS, IN CAGES

STATE COLLEGE, MISS.—Laying hens on floors will out-perform layers confined to cages, according to research conducted during the past five years at Mississippi State University.

The research project, according to James E. Hill, head of the poultry department, used three systems of layer management—floor birds with and without replacements, and cages with replacements.

The report reveals that the floor replacement group produced more eggs with less pounds of feed, had fewer birds culled and replaced, produced fewer stained and leaker eggs and had one-half fewer inedible eggs than the cage birds.

"It appears that replacements on the floor have all the claimed advantages of cages with only two possible exceptions," says Prof. Hill. "These exceptions are fewer extra large and large eggs and the inability of positive identification of the poor layers.

"With the existing high egg production among present day stock and the slight disadvantage of extra large eggs, these exceptions are of little overall importance."

Complete data on the project is available from the agricultural experiment station, State College, Miss.

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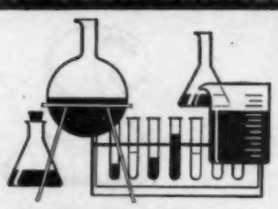

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various investigations can be briefly summarized as follows:

(1) In the opinion of these workers, the practice of feeding NF-180 to sows prior to farrowing and during the first two weeks of lactation is highly desirable, especially in herds with Salmonella infection.

(2) There is a possibility that herd feeding of NF-180 may reduce the general scouring level of pigs when fed over a period of years, although the experiments did not actually prove this point.

(3) Evidence is given in the summary of the sow work that more than 4 lb. NF-180 may reduce number of pigs farrowed, but that the higher drug levels may increase 3 week pig weights. Likely, part of this increase in pig weight can be explained by more available milk supply per pig.

(4) Various nitrofuran compounds, some of which are experimental and not yet on the market or cleared by FDA, have given relatively indifferent results with growing-finishing pigs in several different trials. Effects were more pronounced on pasture than in dry lot, somewhat contrary to usual expectations.

(5) Most other additives, such as Aureomycin, hygromycin, tylosin, etc., failed to produce consistent gain responses. In one trial all additives investigated showed responses, with NF-67 and copper sulfate producing the greatest improvements in daily gain. Feed efficiency in this particular trial was most improved by copper sulfate.

In other swine work forty mature sows were randomly allotted to four different treatments. These were: (1) sows confined to concrete feeding floor and fed 6 lb. of gestation ration per day, (2) Balbo rye pasture plus 2 lb. of the gestation ration per day, (3) Balbo rye pasture plus 4 lb. of the gestation ration per day, and (4) self-fed alfalfa silage plus 3 lb. of the gestation ration per day (sows confined to a concrete floor). All sows were fed by hand twice daily and had water free-choice.

The results of this experiment substantiated earlier work to the effect that Balbo rye pasture will enable mature sows to produce excellent litters with a minimum of feed if good rye pasture is available. The size of the sow and her condition will largely determine the amount of concentrate to feed assuming the pasture is plentiful. The rye pasture had a carrying capacity of about 5 sows per acre and the 2-lb. level of supplemental gestation ration appeared to be quite adequate. The self-fed alfalfa silage sows consumed an average of 14-15 lb. of silage daily and performed equally as well as the other lot. When silage is available it also is an excellent sow feed.

There are several investigations underway in the country to determine the right amount of calcium in gestation rations for sows and gilts. Interest has been stirred up in this aspect of research because of finding that lower levels of calcium reduce parakeratosis and promote faster gains in growing-finishing hogs. However, the same thing does not appear to hold true for gestation rations for sows and gilts. For example, Robertson and associates fed a standard gestation ration containing 0.65% calcium and 40 ppm. of zinc in comparison with ones which had 0.84% additional calcium or 0.84% additional calcium plus 27 ppm. of additional zinc. The gilts were confined to concrete and were hand-fed their respective rations for the entire gestation period.

The results of the experiment clearly show that none of these rations resulted in parakeratosis in any pigs. Those gilts on the 1.5% calcium level farrowed stronger pigs and had a greater number surviving at three weeks than those on the basal 0.6% calcium level. The gilts receiving the additional zinc appeared to milk better than either of the other two lots. These findings indicate that bred gilts raised in confinement should receive a level of calcium higher than the recommended level of 0.6%. This appears to be substantiated by current work at other colleges now underway and largely unreported in the literature as yet. Neither of two trials at Kentucky has shown any interrelationship between embryonic and early postnatal nutrition and the occurrence of parakeratosis.

Cooked Garbage Helps Control Hog Disease

WASHINGTON — Cooking of raw garbage before it is fed to hogs, now required by law or regulation in all 50 states, is improving control of many swine diseases, particularly trichinosis, the U.S. Department of Agriculture points out. The practice has many long-range economic benefits.

The value of cooking garbage was demonstrated during the seven-year state-federal cooperative campaign to eradicate vesicular exanthema (VE), another serious disease of hogs, that ended successfully last fall. Garbage cooking was one of the principal weapons used in this eradication effort. New laws forbidding the feeding of raw garbage were passed in many states during the seven-year period.

Few vehicles are as responsible for maintaining disease in swine as raw, unprocessed garbage, according to animal disease and parasite officials in USDA.

In addition to VE and trichinosis, the other diseases include hog cholera, foot-and-mouth disease (not present in the U.S.), salmonellosis, tuberculosis, erysipelas, and swine brucellosis.

FEED BUSINESS SOLD

SCIO, ORE.—Sale of Wells Feed and Seed to Arlie Elliott is announced by Jess Wells, who has operated the business here since 1945. The sale includes the property, a 24 by 80 foot building, feed and supplies inventory and equipment.

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Grain, Milling Industry in Russia Lacks Frills—but Compares with U.S.

ST. JOSEPH, MO.—How does the Russian grain, feed and milling industry compare with that of the U.S.?

"There is not too much difference in methods and equipment, except that Russia's equipment is minus some of the frills found in the U.S.," said John C. Cowan, assistant to the president of Dannen Mills, St. Joseph, on his return from a four-week tour of Russian grain handling and processing areas.

Mr. Cowan was a member of a U.S. grain study team which made a 6,000 mile tour of Russia and Siberia. He was the only member of the group representing the grain industry. The other men on the team were heads and executives of government grain agencies.

"Russia, already holding a good reputation for clean wheat on the world market, today is working hard to further improve its wheat," Mr. Cowan said. "Its work in the field of wheat variety breeding and research compares favorably with similar work in the U.S.

"Equipment on the collective farms in Russia is about the same type as that found in this country. Also, I learned that concrete silos and flat grain storage are utilized by the Soviet in handling wheat for storage. Usually, the silos and flat storage units are emptied about six weeks before the harvest and made ready for a new crop.

Demand for Wheat

"Because there is a growing demand in Russia for wheat, and because it exports about 5% of the crop, there is no surplus building up there.

"Russian wheat production is increasing and the wheat is of good quality," Mr. Cowan said. "So it is a potential threat against the free nations of the world.

"Russia could easily increase its export operations — either through heavier production or the deliberate dumping of wheat to upset the world market. That possibility should act as a spur to our American wheat producers to continue to improve their crop and processing methods."

"You find women working everywhere in the Russian feed mills. They may be on the business-end of a grain scoop, sampling wheat in a truck brought in from a collective farm, or working in a laboratory. The Russians just don't believe in letting any manpower or womanpower go to waste," said Mr. Cowan.

"There is a definite trend to automation in Russia and they are proud of their modern mills. They insist that their Moscow Milling Combine No. 4 (a combine is a combination of grain elevators adjacent to a mill) is one of the best in the world. This has a storage capacity of 72,000 tons of grain, a milling capacity of 1,500 tons of grain each 24 hours and a bulk flour capacity of 1,500 tons.

Controlled Automatically

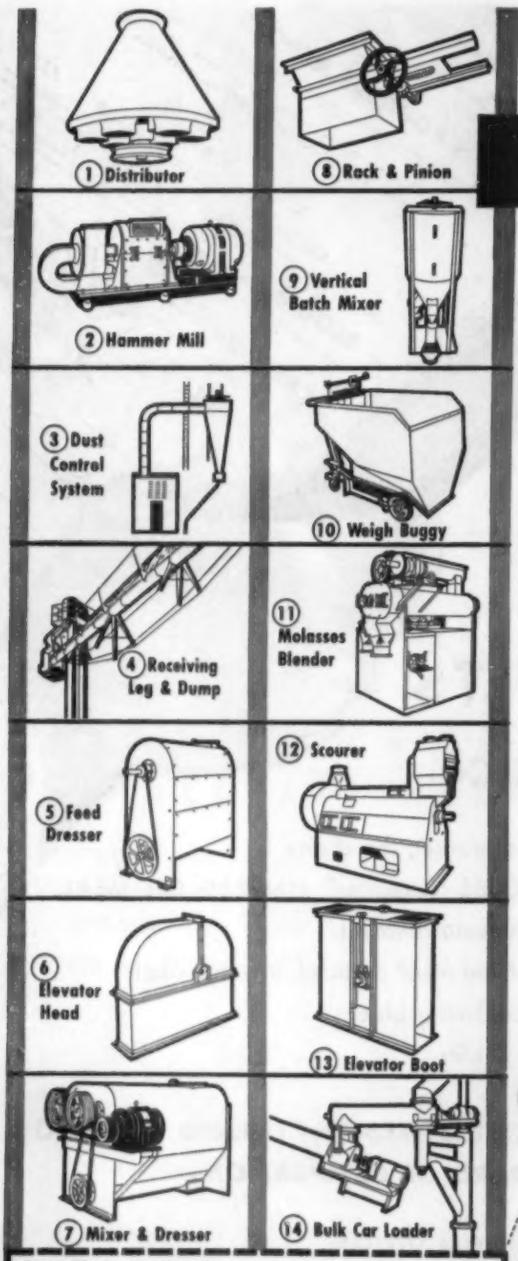
"They take you to the operations office where they control 84 motors from a control panel. Except for five people in the mill and five more in the elevator, the only manual labor used is for loading and unloading grain."

Dust control is emphasized in Russian elevators, and most grain received is freer of foreign material than the wheat received at elevators in this country.

"Being in Russia for a month doesn't make anyone a Russian expert but it does give you an insight into the workings of their grain business, and also on their way of thinking. While I didn't like the restrictions placed on individuals and personal liberty, I was greatly impressed by the progress the Russians are making in wheat production. I think we can profit by their example and step up our genetics work."

Mr. Cowan, whose trip was sponsored by the Great Plains Wheat Assn., visited at this organization's European office in Rotterdam while enroute home to the U.S.

CONTEST WINNER—The 1960 winner of Kraft Foods' Junior Exhibitors' Contest is shown, center, above. He is Donald Aggert, 13, Ashland, Ill. His prize will be a milking Shorthorn heifer of his own choice, to be purchased for him by Kraft. Notification of his prize is presented by E. B. Shemwell, St. Louis, Kraft Agricultural Division, left, and Dona Sarginson of Medora, Ill., who is 1960's "Miss Illinois County Fair Queen." The contest winner, who was showing milking Shorthorn heifers and cows at the Illinois State Fair is in his third year of 4-H work as a member of the Circleville 4-H club near his home. He showed the grand champion cow this summer at the Sangamon County Junior Fair and has won other awards with his herd.



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USDA Official Says Consumer Can Be Confident in Foods

DENVER, COLO.—Dr. William L. Popham, assistant administrator of regulatory programs for the USDA's Agricultural Research Service, said here that the American consumer can be confident that the food he eats contains no agricultural chemicals which might be harmful.

Speaking before sessions of the National Association of State Departments of Agriculture, Dr. Popham said the food industry is seeing to it that agricultural chemicals are used properly.

"Food firms are more conscious of chemicals than perhaps any other group," Dr. Popham asserted. "They often have done their own research, and they demand that farmers who supply them food for processing use chemicals properly."

Dr. Popham said chemical manufacturers must research their products fully before putting them on the market. Farmers in turn must follow directions for a chemical's use precisely, he said.

"There never has been a seizure of any crop treated with a chemical where the directions have been followed," he said. "Any seizures have grown out of gross misuse of chemicals by farmers."

Adopt Resolutions

At the business meetings, the association resolved that legal responsibility for regulation and inspection of agricultural products be vested in agriculture departments exclusively instead of among various other agencies.

The resolution said farmers and agricultural agencies realize their obligation to provide wholesome food and that a single agency can best regulate and inspect the industry.

The agricultural chiefs asked Congress to consolidate regulations on meat and poultry inspection, pesticides, milk inspection and plant and animal disease control in the departments of agriculture. Such duties now are carried out by several agencies.

Other resolutions asked for more money and research to control and eradicate livestock diseases, particularly mastitis in dairy cattle, tuberculosis and brucellosis.

The convention recommended that states prohibit use of live hog cholera virus and asked that states which have not done so bar interstate shipment of swine so vaccinated.

William L. Henning, Pennsylvania secretary of agriculture, was elected president of the association at the convention.

Fights Face Flies

MADISON, WIS. — A chemical known as "DDVP," produced as an insecticide by the Shell Oil Co., proved "very effective" in fighting an outbreak of face flies attacking beef and dairy cattle in southern Wisconsin.

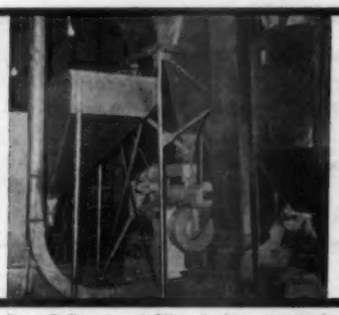
The fly was identified in one area in August by Dr. E. H. Fisher, University of Wisconsin entomology department, and was later reported spreading to other sections. It was also reported in epidemic proportions in some other states.

Dr. Fisher asked the Hopkins Chemical Co. here to prepare an experimental mixture of DDVP as a 0.2% solution in heavy corn syrup for direct application to the face of cattle. Experiments showed the mixture to be very effective, Dr. Fisher reporting that flies were dead four seconds after hitting the syrup on the cow's face.

DDVP had previously been approved by federal officials in a half of one per cent solution for use in barns and milk rooms, but had not been cleared for direct application to animals. The Madison chemical firm obtained verbal approval for its direct application by phone, and final clearance was later checked out with federal and state officials.

AWARD PRESENTED—**Harold Johnson, Ft. Collins, Colo., director of the Colorado Grain, Milling & Feed Dealers Assn., left, is shown presenting a service award plaque to Rodney Tucker, retired extension agronomist at Colorado State University. The service award was presented to Mr. Tucker in recognition of his years of service to the association, Mr. Johnson said. Mr. Tucker recently retired from Colorado State University's staff after 30 years of service.**

Alexander Bros. Inc., Osgood, Ohio specialize in poultry and hog feeds; use their Master Pellet Plant to put up 100-lb. bags of 3/16" pellets at a 60 bag-per-hour rate. Left to right: Vincent B. Mascher and Louis Alexander.



Elmer E. Bryant and Oliver Loving, owners of Farmers Milling Co., Graham, Texas report their Master Pellet Plant to be "an excellent piece of equipment." They handle all types of feed material and pellet 3/16", 1/2" and 3/4" sizes.

Walter Daily, Daily Mill and Elevator, Palestine, Illinois states: "we are well pleased with our Master Pellet Plant. It's compact and easy to operate." The firm operates their Master six days a week utilizing a variety of feeds.

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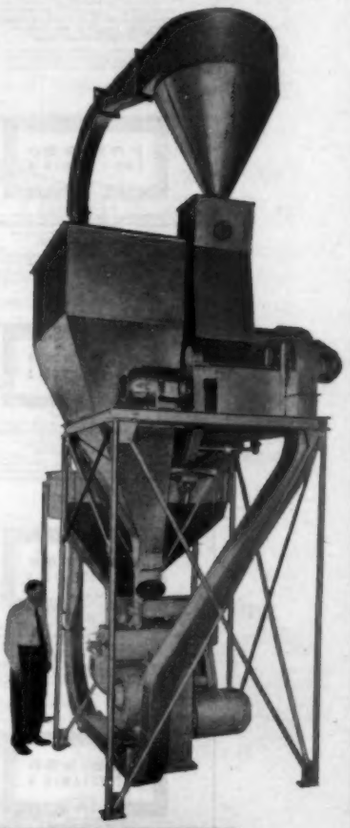

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1960 Biggest Year For Arkansas Turkeys

BEEBE, ARK.—With four major turkey-production areas in Arkansas, the 1960 turkey-feeding program is reported to be the most outstanding in the history of the state. Even though the national turkey-raising program is about equal to that of 1959, the number in Arkansas has increased by about 11% in 1960.

The Arkansas department of the Crop Reporting Service indicates that 2,078,000 turkeys are being raised as compared with 1,847,000 last year. The vast increase has been in heavy breeds, with this number rising from 1,511,000 to 1,946,000. However, there has been a marked decline among light types, with this kind declining from 363,000 to 132,000.

The main turkey-processing areas are: Berryville of Carroll County in northwest Arkansas, Ozark of Franklin County in the state's western Ozarks, Nashville in Howard County at the southern foot of the Ouachita Mountains and Hot Springs in the pine-covered resort area of Garland County.

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Research, Regulatory Costs Are Problems In Chemical Industry

NEW YORK—"The chemical industry is becoming an increasingly important partner in the most basic of all enterprises—the production of food for our growing population. But this growing business does have its problems."

This statement was made by Thomas L. McClintock, market research agricultural projects manager of Merck & Co., in an address to members of the Chemical Marketing and Economics Division of the American Chemical Society, meeting in New York.

"New mass production methods of raising livestock and poultry have come from the chemical industry," Mr. McClintock declared, "through vitamins, antibiotics and other microingredients for scientifically designed feeds, and drugs for effective disease control."

He pointed out that while the business of supplying chemicals to the animal industry is large and growing, it is not without severe problems to the seller.

"Competition among domestic producers is fierce," he said, "and low-cost imported goods have further intensified competition. An even greater problem exists in the tremendously increasing costs of research and regulatory clearance.

"Added to the high investment and operating costs necessary to do research in this field are the rapidly mounting costs of satisfying the regulatory requirements for new animal products. It often costs a half million dollars or more merely to determine whether or not a new product can legally be sold."

Mr. McClintock said that the stakes in this game have become so high that only those companies with large research organizations and with considerable resources of risk capital can afford to join in the race.

He predicted that sales of chemical industry products to livestock and poultry growers, now approaching $250 million a year, would increase to $1 billion annually by 1970.

In detailing the sales value of chemical industry products to various segments of the animal feed industry, Mr. McClintock said that sales of cattle feed microingredients now represent some $20 million a year. These microingredients were virtually unknown five years ago. He added that microingredients used in swine feeds are worth about $40 million a year now.

Prevention of disease, which costs the livestock industry an estimated $1.8 billion a year, or more than 10% of its gross sales, still looms as a major research problem.

"Losses of this magnitude will continue to spur research efforts aimed at their reduction," he said

"Animals now consume more antibiotics and more vitamin A than are used in human applications, with virtually every drug in the human pharmaceutical arsenal being brought to bear in the battle against animal diseases losses.

"The bulk of the chemical industry products now being sold to animal producers either did not exist 10 years ago or had not found application in animal health and nutrition," Mr. McClintock concluded. "Dominant products in the market of the 1960's will probably represent developments still beyond the current frontiers of science."

Higher Wage Noted

SACRAMENTO, CAL.—The average production worker in the grain mills industry in California was working a longer week and earning a higher hourly wage in July. The California State Department of Industrial Relations reports that grain mill workers earned an average of $2.63 in July, compared to $2.59 in June and $2.47 in July, 1959. The average work week was 43 hours, compared to 42½ hours in June and 41.8 in July, 1959. The average weekly earnings for grain mill workers were $113.09, compared to $110.08 in June and $103.35 in the same month last year.

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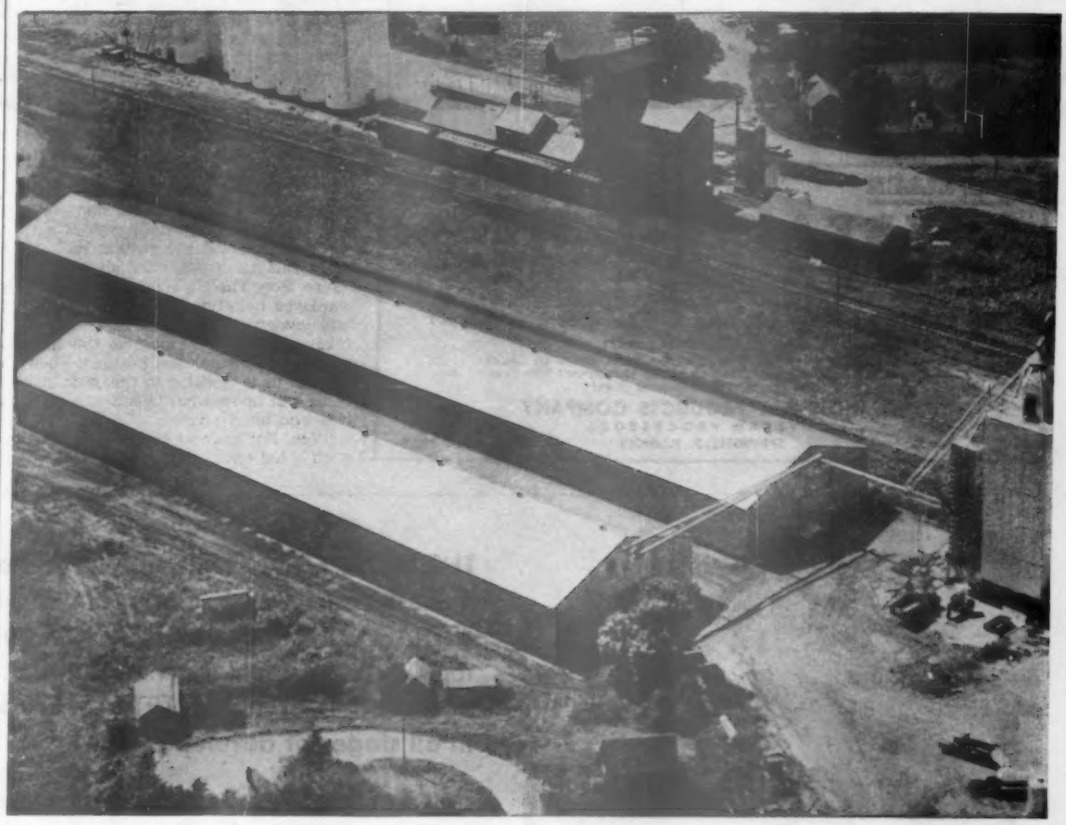

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JOE BROOKS

(Continued from page 26)

tins and refresh ourselves on what you want us to do about specific feed merchandising policies. Lots of things go on around this mill, and we're apt to forget some things you tell us—unless we're reminded."

"I get it," Joe said thoughtfully. "Through the bulletin, you would know exactly what I mean about merchandising bulk feeds, pelleting, complete feeds, etc., instead of trying to read my mind on the subject."

Pop laughed. "Yeah, something like that, Joe. You've got about 12 employees between this mill and the one at Endeavor. If you got out such a bulletin, it wouldn't cost much. And you'd make better employees out of us."

Joe Agrees

Joe whistled and a light came into his eyes. "Pop, you are absolutely right. This bulletin would be a follow-up on the sales training meetings to make them more effective. And it would mean you fellows would have a constant reminder of what I want you to do."

"I'm glad you like the idea, Joe. It struck me this would be something all the boys would like to get. One hears so much nowadays about trends in the feed industry. In each monthly employee bulletin, you could summarize these trends and tell whether you think they will affect our business and our customers."

By this time Joe was all smiles. "Sure, Pop. The big companies all use employee bulletins. Why can't a feed mill owner use the idea, too? All it takes is a little time and thought, some mimeo paper and postage. Then none of us is working in the dark. All of us will know what this firm's policies and aims are."

"Yep, I'm glad we're going to issue such a bulletin," Pop reflected. "You know, in American retailing today, there is so much emphasis upon the customer and what he wants. That has made us forget somewhat that a lot of our volume and good customer service depends upon the knowledge and morale of the feed mill employee."

Joe agreed. "And if we train our employees right, then it will be easier for them to give good service to customers. Pop it sure was a lucky day when I hired you on a part time basis You've come up with some excellent ideas over the years."

"It was lucky for me too when I came to work here Joe. Gosh in this feed mill a man is close to life as it is lived in the country. Lots of interesting things go on every day. If I quit there'll be a funeral pretty quick, I'm afraid."

"That funeral is a long way off, Pop," said Joe. "A man with as much interest in life and with good ideas like you have should be around for a long time."

Cargill Buys Elevator

MINNEAPOLIS — Purchase by Cargill, Inc., of a 55,000 bu. grain elevator at Belhaven, N.C., has been announced here.

The elevator, leased and operated by Cargill since 1954, was owned by Pungo Grain Co., Belhaven. Its location on the Pungo River, adjacent to the inland waterway along the Carolina coast, enables it to receive local grains by truck and ship them by both rail and water.

Benjamin S. Jaffray, Cargill's southeast regional manager, said largest volume grains through Belhaven are soybeans, mainly for the company's recently completed processing plant in Norfolk; corn, shipped both to Norfolk for export and to mills serving the Delmarva poultry industry, and oats and wheat, for merchandising throughout the Atlantic coastal area.

THE MOST ECONOMICAL WAY to eliminate infestation on or near the surface of your grain is with Douglas TETRASPOT. TETRASPOT is a low-gravity fumigant . . . it penetrates the top 15 to 20 feet and hangs there. The gas formed by the evaporation of liquid TETRASPOT kills all forms of insects, in all stages of development.

ONLY 2 GALLONS of TETRASPOT *will completely fumigate* 1000 *bushels. And it takes fewer gallons to fumigate with TETRASPOT than with ordinary fumigant, saves you time too. That's because with TETRASPOT you fumigate only the area that's infested, not the entire grain mass as with an ordinary fumigant.*

FOR SPOT TREATING pour TETRASPOT in a circle around the infestation about 6 to 8 feet from the edge. This ring of fumigant walls off the infested spot and drives the bugs into the center. After 3 or 4 hours dose the center of the spot. **Get TETRASPOT today. It costs less because it takes less.**

Why pay good money to fumigate clean grain?

*If you're not sure about the extent of infestation in your grain, write today to have a Douglas Sanitation Expert check all your grain. No charge, no obligation.

Grain Sanitation Division

Douglas Chemical Company

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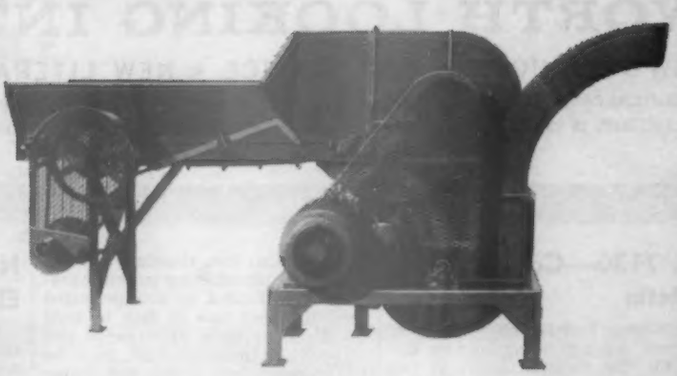
Sired of the research, engineering, and actual field testing acquired through twenty years' service in the feed processing industry.

When producing this equipment, our engineers were given one instruction: "BUILD THE FINEST." We'll welcome an opportunity to prove in your own plant how well they succeeded.



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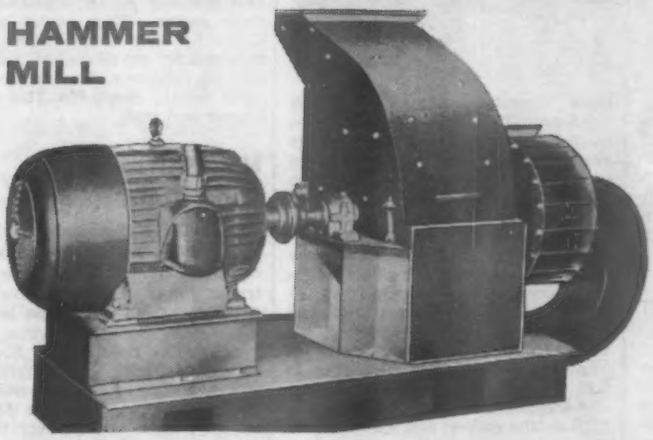
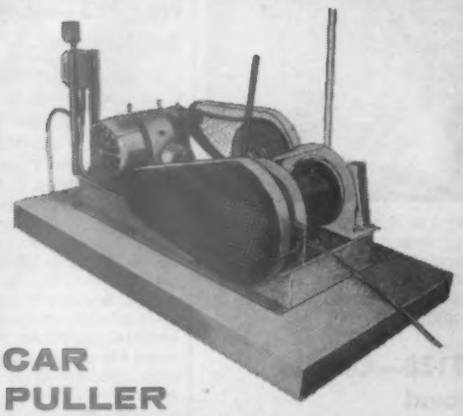


The hammermill that has earned the affectionate title: "A GRINDING FOOL." An extra deep 27" grinding chamber provides greater impact and assures maximum use of screen area.



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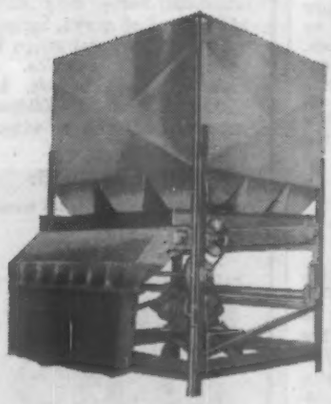

A high-efficiency cooler of vertical design. Its low height simplifies installation in limited space. 10 to 14 tons per hour capacity.

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No. 7130—Conveying Bulletin

A 16-page bulletin on "Conveying Systems" has just been issued by The Day Co. The bulletin illustrates and explains "efficiency gains possible

with Day low density or high density conveying systems." Typical arrangements are shown as well as several installation photographs. For further information, check No. 7130 on the coupon and mail.

No. 7128—Enzyme Approval

Announcement that the use of "Agrozyme" in all livestock fattening rations using low-moisture corn is now possible has come from the Merck & Co., Inc., chemical division. During its introductory period, Agrozyme was limited to non-medicated feedstuffs, but now it may be used on the same basis as vitamins and other feed ingredients. It may be incorporated into cattle and swine feed supplements nationwide by feed manufacturers. Since late April, 1960, Agrozyme has been used in commercial feedlot operations in southwestern states. Research has shown the gain-stimulant is compatible with procaine penicillin, hormones, vitamin A and minerals at recommended use levels, firm officials say. For more information, check No. 7128 on the coupon and mail.

No. 7131—Equipment Bulletin

Equipment for the process industries is described in a new 12-page, two-color bulletin offered by the Fuller Co., a subsidiary of the General American Transportation Corp. The new bulletin, G-3D, discusses applications and performance characteristics of Fuller-Kinyon pumps, "Airveyors" pneumatic conveyors, Fuller-Huron "Airslide" fluidizing conveyors, rotary compressors and vacuum pumps, horizontal-grate coolers, Fuller-Humboldt suspension-type preheaters, Sutorbilt positive displacement blowers and gas pumps and Lehigh induced draft fans. Operating principles are explained and photographs show typical installations. Some 13 photographs and 18 drawings supplement the text material. For copies of the bulletin, check No. 7131 on the coupon and mail.

No. 7129—Adjustable Elbow

A new three-section adjustable elbow with special clamp band connection has been introduced into the line of Kleen Grain elevator equip-

ment manufactured by Huss & Schlieper. This new elbow can be easily installed and adjusted to any angle by loosening the two bolts at each side of the two-section clamp band, the firm says. No welding is necessary. With this type of connection, plus Huss & Schlieper's new automatic butt-welding process, the new Kleen Grain elbow has a smoother interior surface, the company says, allowing a better flow of materials and providing longer wear at critical points. The three-section elbow is available from Huss & Schlieper in 6 in., 8 in., 10 in. and 12 in. diameters. For additional information, check No. 7129 on the coupon and mail.

No. 7132—Pallet Booklet

A digest-size booklet describing pallets and their uses has been published by the Raymond Corp. Titled "A B C of Pallet Handling," the booklet illustrates different types of pallets and explains their uses. The advantages of wood and metal pallets are listed and pallet specifications are explained. The booklet describes how to estimate pallet requirements by floor-area, weight and unit methods. Instructions for loading pallets are given and standard loading patterns are illustrated. Suggestions are offered for safe pallet operations. For a copy of the handbook, check No. 7132 on the coupon and mail.

No. 7125—Feed Pellet Binder

The research division of Cargill, Inc., has developed a feed pellet binder which, it claims, is "superior to any other now on the market." The binder, "Dura-Bond," is a by-product of paper manufacturing—specifically, calcium-base spent sulfite wood liquors, dried to a fine powder. Cargill says the Food and Drug Administration has certified there is no problem of safety in its use in animal and poultry feeding. The company claims three major advantages for its product: "(1) It reduces 'fines' in pelleted feeds. This improvement is significant both in the first 'green' stage as the pellet comes from the pellet mill, and in the finished product as delivered to the customer. (2) Research and actual use have shown that Dura-Bond increases mill efficiency. Because of its hygroscopic nature, Dura-Bond allows more steam to be used in mixing, producing a lubricating effect that reduces die friction. (3) Extensive feeding tests have shown Dura-Bond has a definite feeding value. Dura-Bond is approximately 95% organic, with 20% sugars in the form of mannose." Cargill says Dura-Bond gives best results used from 1-1¼% to 3% on a dry weight basis (2% to 3% is recommended for testing purposes). It should be added directly above the mixer and agitated at least three minutes before going to the mixer on the pellet mill, the firm adds. For more information, check No. 7125 on the coupon and mail.

No. 7126—Feed Flavor Booklet

A new pocket-sized booklet describing "the benefits of using Pignectar (sow milk flavor) in prestarter and starter rations and Sucro Flavor (sweet hog feed flavor) in growing and fattening formulas is available to feed manufacturers from Flavor Corporation of America. Entitled "Someone's Been Squealing," the 10-page booklet features light dialogue in the interrogation of a hog named "Hamstrung" by two detectives. Feed firms using the two products can obtain quantity copies imprinted over their names. These copies are designed for distribution to dealers and salesmen for use as mailers and handouts to farmer customers. For complete details, check No. 7126 on the coupon and mail.

No. 7127—Bulk Truck Data

Availability of an advance specification sheet on the new line of lightweight aluminum "Feed Piper" bulk trucks and trailers for hauling bigger payloads of feeds has just been announced by Sprout, Waldron & Co., Inc. Advance Specification Sheet No. 223 shows several photographs of this new line of trailer and truck bodies in capacities from 440-1,300 cu. ft. Weight savings over the con-

Send me information on the items marked:

- ☐ No. 7122—Molasses Unit Bulletin
- ☐ No. 7125—Feed Pellet Binder
- ☐ No. 7126—Feed Flavor Booklet
- ☐ No. 7127—Bulk Truck Data
- ☐ No. 7128—Enzyme Approval
- ☐ No. 7129—Adjustable Elbow
- ☐ No. 7130—Conveying Bulletin
- ☐ No. 7131—Equipment Bulletin
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Endorsed by grain dealers, the Columbus heavy duty Roller Mill will roll all grains. Superior design, sturdy construction for years of profitable service. Four sizes—300 bushels, 600 bushels, 900 bushels, 1200 bushels per hour, with or without electric motor.

THREE MODELS:

Trailer, stationary or truck mounted

Operate the mill 10 days. If not satisfied, return it. WE WILL REFUND YOUR MONEY AND PAY RETURN FREIGHT.

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VACCINATE FOR PROFIT OR GAMBLE AND LOSE?

Cyanamid helps you take a big part of the gamble out of your contract hog raising operations.

Hog farmers that gamble on getting through without vaccinating for hog cholera and erysipelas have the odds against them. When a hog cholera outbreak occurs, losses of unprotected pigs can run between 90 to 96 percent! Erysipelas kills 3 to 6 percent and stunts and cripples many more.

The *true* gambler never passes up a sure thing. The immunity that results from the proper use of ROVAC® and DUOVAX® usually is so solid that chances of losses from these two diseases are greatly reduced.

You can protect profits—eliminate needless risk—with minimum time, labor and expense.

ROVAC and DUOVAX can be injected at the same time. You handle pigs *once* for both vaccinations.

User's report

Paul V. Wansley, partner in Georgia Feed and Hatchery, Inc., Elberton, Ga., handles the immunization program of W. D. Winn at his new 138-head set-up at nearby Royston.

Mr. Wansley says, "With a full year of use behind us ROVAC for hog cholera and DUOVAX for erysipelas have been 100% effective. Neighboring farmers have experienced death losses averaging 3%, proving these diseases are in this area."

Avoid expensive risks! Vaccinate *all* litters. Be sure all pigs you contract for are protected with both ROVAC and DUOVAX. Immunization is complete within 3 weeks. *ROVAC® Hog Cholera Vaccine, DUOVAX® Erysipelas Bacterin.* American Cyanamid Company, Agricultural Division, New York 20, New York.

ROVAC and DUOVAX protect against hog cholera and erysipelas.

Catch and handle pigs only once—inject with ROVAC (1) and DUOVAX (2) simultaneously!

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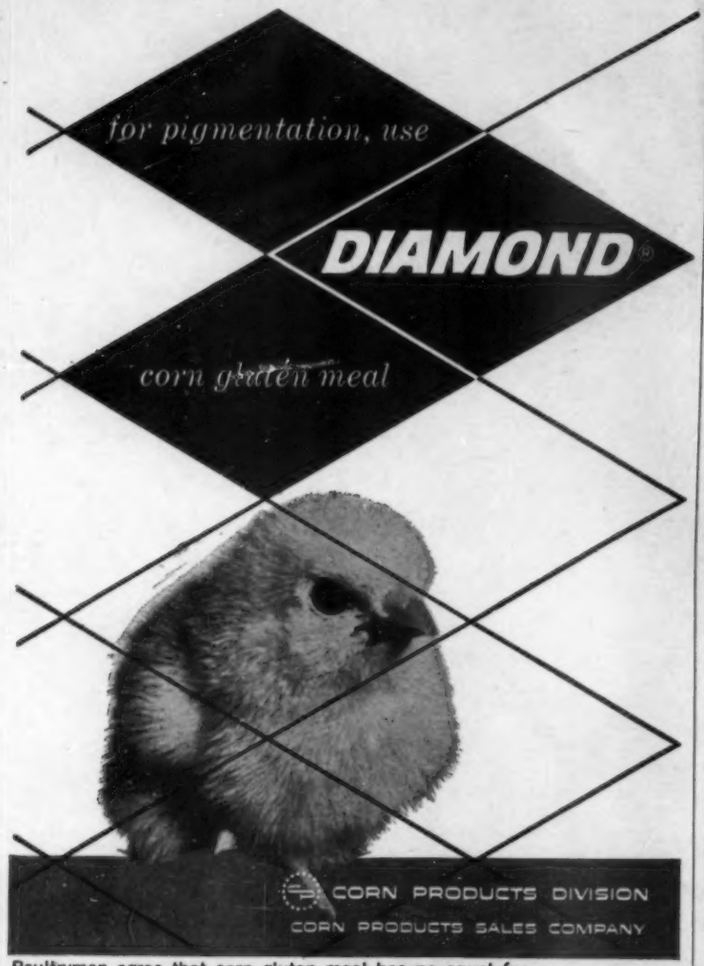

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ventional type bodies range from 1,000-2,000 lb., depending on the size of the unit, the firm says. For copies of the sheet, check No. 7127 on the coupon and mail.

No. 7122—Molasses Unit Bulletin

Sprout, Waldron & Co., Inc., has available for distribution its new bulletin on the Customix cold molasses feed mixing unit. Illustrations, descriptive and dimensional data cover the subject, the company says. The bulletin describes the unit as a high-speed mixer for uniformly adding molasses to pre-mixed feeds at rates between three and six tons an hour. For details, check No. 7122 on the coupon and mail.

Also Available

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number of the coupon and forwarding it to Feedstuffs.

No. 7075—New UGF source, Chas. Pfizer & Co., Inc.

No. 7076 — Moisture tester check, Seedburo Equipment Co.

No. 7077 — Power shovel hook, Brooks Machine & Mfg. Co.

No. 7078—Patented feeder, Day Co.

No. 7079—Antibiotic bulletin, Abbott Laboratories.

No. 7080 — Grain expander, The V. D. Anderson Co.

No. 7081 — Utility body bulletin, Baughman Manufacturing Co.

No. 7082—Enzyme hydrolyzed casein, Amber Laboratories, Inc.

No. 7083 — Batch mixing muller, Frederic B. Stevens, Inc.

No. 7084—Organic digester, Ryter Corp.

No. 7085—National parts service.

No. 7086—Egg color film, Hess & Clark.

No. 7087—Vitamin E Product, Merck & Co., Inc.

No. 7088—Trace Mineral Salt, Morton Salt Co.

No. 7089—Bulk truck control lever, Productive Acres Manufacturing Co.

No. 7090—Packaging guide, Bemis Bro. Bag Co.

No. 7091 — Truck scale, Toledo Scale, Division of Toledo Scale Corp.

No. 7092 — Mixer, blender article, Sprout, Waldron & Co., Inc.

No. 7093 — Elevator construction booklet, Weitz-Hettelsater Engineers.

No. 7094 — Bulk feed bin bottom, Brock Manufacturing, Inc.

No. 7095—Terramycin vitamin crumbles, Chas. Pfizer & Co., Inc.

No. 7096 — "Twin-Pack" Poultry medication, Dr. Salsbury's Laboratories.

No. 7097 — Grain dryer, Daycom, Inc.

No. 7098—Moisture proof bag, Abbott Laboratories.

No. 7099—Poultry record chart, Hess & Clark.

No. 7100—Baby pig feeder, Doughboy Industries.

No. 7101—Equipment line folder, A. T. Ferrell & Co.

No. 7102 — Grain inspection light, Seedburo Equipment Co.

No. 7103 — Long cone collectors, Archer-Daniels-Midland Co.

No. 7104—Coccidiosis product manual, Dorn & Mitchell Laboratories, Inc.

No. 7105—Bulk feed bins, Fremont Manufacturing Co.

No. 7106—Feed holding bins, Behlen Manufacturing Co.

No. 7107—Two vitamin A products, Dr. Salsbury's Laboratories.

No. 7108 — Molasses mixer, Seco, Inc.

No. 7109—Range block press, Landers Mill Manufacturing Co. & Landers Machine Co.

No. 7110—Fan cooled motor, Brook Motor Corp.

No. 7111—Calf milk replacer, Borden Special Products Co.

No. 7112 — New crossbred pullet, Arbor Acres Farm, Inc.

No. 7113 — Research laboratory, Flo-Tronics, Inc.

No. 7114 — Grubicide Supplement, Moorman Manufacturing Co.

Pelleting of Dairy Rations Promising

MANHATTAN, KANSAS — Pelleting of dairy rations holds promise for the future, Dr. George Ward of the Kansas State University dairy department believes.

In experiments in the Kansas agricultural experiment station, Dr. Ward has found that where pelleted rations are fed free choice, feed intake can be increased considerably and the level of butterfat content maintained. The pellets were two thirds finely ground alfalfa and one third finely ground milo.

Hostein cows, for instance, consumed 55-60 lb. of feed (pellets plus hay) in the experiment. Whereas the average dairy cow eats about 2½ lb. hay for 100 lb. of body weight, with the pelleted feed hay intake could be increased to 3½ lb.

Pelleted rations also increased protein content of the milk about 10%.

Where two groups of cows received the same ration, one in pelleted form and the other not, the results were not encouraging. Jersey cows could not tolerate the pelleted ration for more than two weeks at a time and the butterfat content of the milk declined.

Whether pelleting of dairy rations would be profitable will depend upon the cost of pelleting and the ability of the cow to produce, Dr. Ward says. He said that he expects that "as more economical pelleting processes are developed and more intensive dairying is practiced, there will be more pelleting of dairy feeds."

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California Animal Industry Program Plans Announced

SACRAMENTO, CAL.—A format similar to that of last year has been adopted by chairman Bert F. Maxwell of Petaluma, for the California Animal Industry Conference to be held Oct. 17-18 in Fresno Memorial Auditorium.

Jointly sponsored by the California Hay, Grain & Feed Dealers Assn. and the University of California, the conference will be featured by luncheons on both days and a banquet on Monday evening.

The opening session will be addressed by McKay McKinnon of the Food and Drug Administration on "The FDA Approach to Drug Control." Other speakers include Dr. S. A. Peoples on "Veterinarian Problems and FDA Regulations" and Dr. George Kohler on "Growth Factors in Forages."

The first afternoon session will be devoted to the theme of mineral nutrition with Robert W. Caldwell, Andersen-Smith Milling Co., San Francisco, presiding. Presentations will be made on "Trace Element Interaction in Nutrition" by Dr. G. K. Davis; "Zinc Studies with Poultry" by Dr. Howard Kratzer; "Calcium and Phosphorus Studies with Cattle" by Dr. Glen Lofgreen, and "Energy Values in Feedstuffs and Their Use in Poultry Nutrition" by Dr. Frederick W. Hill.

Dr. J. H. Meyer of the department of animal husbandry on the university's Davis campus, will preside at the second session on Tuesday morning. The theme will be "The University's Place in the Feed Industry."

Bill Rooney will speak on "Poultry Field Studies"; Horace Strong on "Beef Animal Field Studies"; Dr. Blaine McGowan on "Application of Veterinarian Research," and Dr. Herman Almquist on "Interpretations of Nutritional Literature."

H. V. Nootbaar, H. V. Nootbaar & Co., Pasadena, will preside at the final business session at which Dr. D. G. Alrich will speak on "The Objective of University Research" and G. R. J. Law will discuss "Research in Blood Groupings of Turkeys."

A panel discussion will follow at which Hobe Halloran will represent poultry interests; H. H. Cole, beef and dairy and William Drum, grain.

Dedication Announced

GROTON, CONN.—The new Pfizer Medical Research Laboratories, already in full operation here, will be dedicated Oct. 6 before an audience of doctors, research scientists, leading educators, government officials and executives of the pharmaceutical industry, according to announcement by the firm.

The major address will be given by Dr. Irvine H. Page, director of research at the Cleveland Clinic Foundation.

Gov. Abraham Ribicoff of Connecticut will speak and brief talks will also be given by John E. McKeen, president of the 111-year-old pharmaceutical and chemical company, and by Jasper H. Kane, vice president in charge of research and development.

Tours of the modern research facility will begin at 10:30 a.m. and resume at the conclusion of the formal program in the afternoon.

Quality Egg Council Hires J. Timberlake

FREMONT, N.H. — A spokesman for the Quality Egg Council has announced that James Timberlake has been hired as executive secretary for the coming year. The announcement was made by Robert Horsburgh, Fremont, past president of the New Hampshire Poultry Growers Assn. and chairman of the New England Egg Producers' Assn. executive committee.

Mr. Horsburgh explained that Mr. Timberlake has been "on loan" to the Council from Wirthmore Feeds, Inc., for the yast year to assist in the development of the New England Seal of Quality program.

He added that Mr. Timberlake's decision to continue with the Quality Egg Council's program on a permanent basis emphasized its progress thus far and its prospects of future growth. Mr. Horsburgh urged New Hampshire poultry growers and their friends everywhere to make generous contributions to the program.

C. D. Gaddy, Jr., Joins Pillsbury Feed Group

MINNEAPOLIS—Clarence D. (Skip) Gaddy, Jr., began work recently as nutritionist for the Pillsbury feed division at its general offices in Minneapolis.

Born in Goldsboro, Tenn., Mr. Gaddy attended high school at Sweetwater, Tenn., and was graduated from the University of Maryland. After a tour in the air force as a pilot, he received his master of science degree in animal nutrition from the University of Tennessee.

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YOU CAN SELL AT LOWER PRICES AND INCREASE YOUR PROFITS.
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* SWISHER Super Concentrates are easy to work with.—You have only to add grain and soybean meal to finish the job of manufacturing a complete line of SWISHER finished feeds.

* You produce better feeds—local mills are given the advantages of extensive research and laboratory facilities. SWISHER supplies all the necessary scientific knowledge, so that you can guarantee your customers the highest quality feeds that are available today and in the future.

* You have an efficient merchandising plan. A complete advertising and sales promotion program to promote your Feed Mill as a feed manufacturer in your trade area is planned and directed by skilled and specially trained people.

Investigate the SWISHER Franchise for your area today. It's so valuable—and more valuable every day!

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High-Moisture Corn Fits Growing-Finishing Hogs

By Drs. J. D. Jones, Vaughn Speer, Virgil Hays, William M. Hunt and Damon V. Catron
Iowa State University

EDITOR'S NOTE: *High-moisture corn is a satisfactory feedstuff for growing-finishing hogs, according to the results of a series of tests conducted at Iowa State University. The accompanying article appeared in Iowa Farm Science magazine, published by Iowa State University, Ames. The authors are all members or former members of the Iowa animal husbandry department.*

Interest in storing high-moisture corn and feeding it to livestock has been growing. Rigid requirements for storage and the cost of drying corn have given push to the search for ways to preserve corn with excess moisture without great loss of nutrients and spoilage.

Successful storage of corn harvested at an early date allows livestock producers to use cornstalks, either as silage or pasture, at a time when they have a greater nutritive value than later. Harvesting losses also are minimized when corn is removed from the field before stalks become brittle and blown over. An additional advantage of high-moisture corn could be a superior nutritive value.

What about feeding the high-moisture corn to hogs?

A series of tests over an 18-month period has shown that high-moisture corn is a satisfactory feedstuff for growing-finishing swine. It's highly palatable. To maintain quality, however, it requires special storage and handling, especially in warm seasons.

Pigs fed high-moisture corn in our tests made equal, and sometimes superior, gains to pigs fed dry corn. But more feed per pound of gain was required on a high-moisture corn diet when the pigs were offered corn and protein supplement free-choice.

Pigs offered high-moisture corn and protein supplement free-choice tended to eat a higher proportion of corn than comparable pigs offered dry corn and supplement free-choice. When we limited protein intake in a complete ration, however, less feed was required per pound of gain by pigs fed high-moisture corn than those fed dry corn.

High-moisture corn has received a variety of definitions. But all agree in one respect—that the corn contains enough moisture to promote some degree of fermentation during storage.

The preferred method is to harvest the corn when it still contains a high level of moisture, usually more than 20%. Another method is to add water during or after placement in the storage structure. Our tests were with corn harvested and stored when it contained the desired amount of moisture.

Preserving high-moisture corn as a feedstuff with maximum nutritional value involves several factors. Airtight storage is needed if the corn is to be preserved for feeding in the spring and summer months. Respiration of the corn in an air-tight structure increases the concentration of carbon dioxide at the expense of oxygen so that molds and aerobic bacteria can no longer grow.

If outside air containing oxygen is allowed to enter, microbial growth can flourish and feed upon the nutrients.

Temperature and humidity also affect microbial growth but aren't as critical in a high concentration of carbon dioxide as when high levels of oxygen are present.

Various insects and mites can cause damage to stored grain, but, without oxygen, these organisms are no problem. The amount of infection by microorganisms before harvesting also has an effect on the keeping quality of the corn.

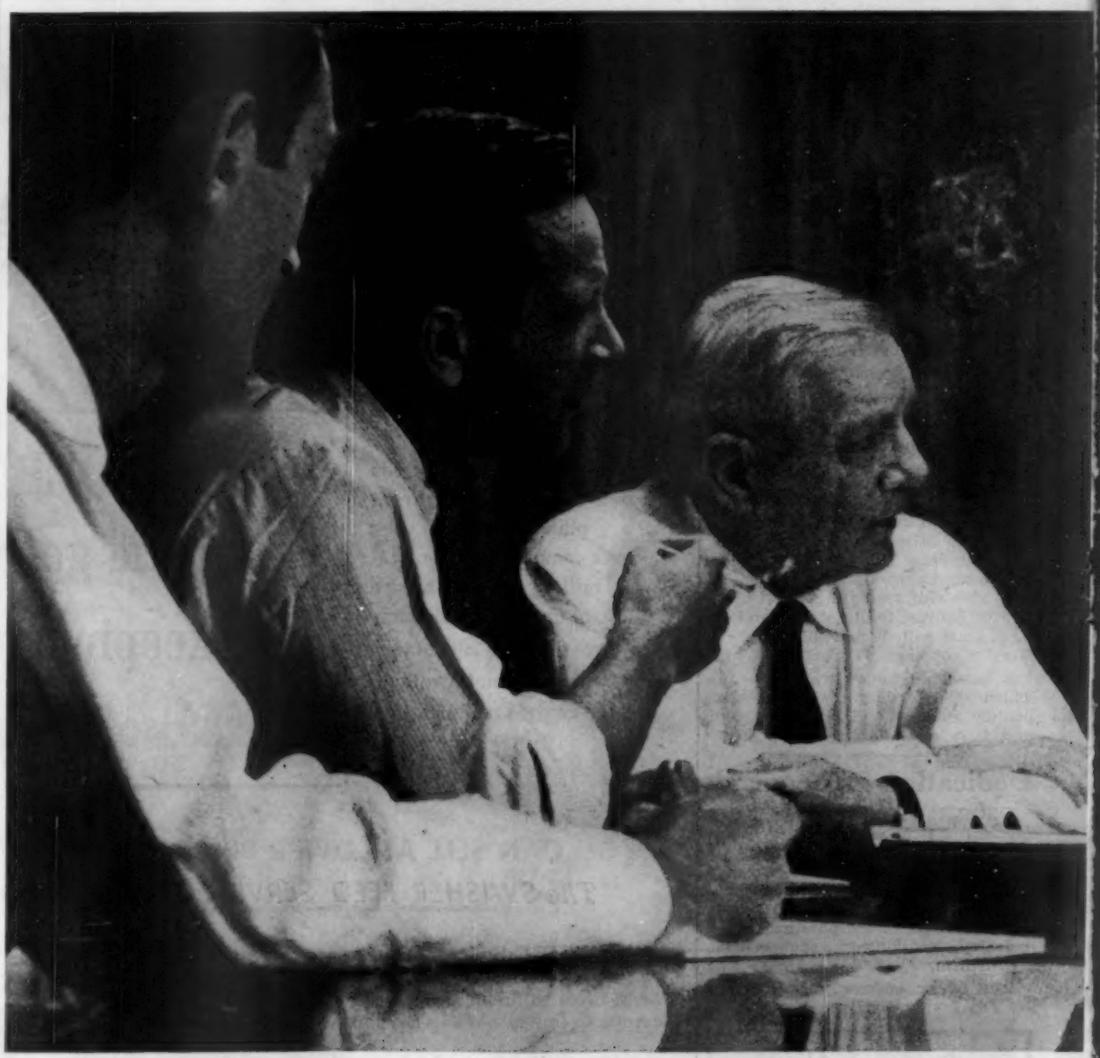
At Iowa State University we conducted a series of experiments over an 18-month period to evaluate the nutritive value of high-moisture corn for growing-finishing swine. We also used corn of different moisture levels to determine whether there was a "best" moisture at which to harvest and ensile corn to maintain top nutrient qualities as a feedstuff for growing-finishing swine.

Two different types of structures were tested as storage facilities for high-moisture corn in conjunction with the feeding trials since the type of storage is so critical.

Corn for each test in the series was of the same variety and came from the same field in such a way that a representative sample of the entire field was available for each experimental ration.

Storage Facilities: The two types of storage structures used were corrugated steel bins—sealed with mastic at all joints—and air-tight silos.

Three of the five bins used were also fitted with a polyethylene liner as an additional test facility for storing high-moisture corn. The bins were 6 ft. in diameter, with a capacity of



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THE BURLAP COUNCIL

about 300 bu. Corn at moisture levels of 37.3, 29.3 and 21% was stored in the bins.

Extreme care was used to prevent puncturing the polyethylene liners. Immediately after filling, the tops of the liners were sealed with plastic tape.

A fourth bin, with no liner, was made as air-tight as possible and was filled with corn containing 29.3% moisture. The fifth bin was used for corn to be used as the control ration; the corn was dried, with air heated to 160° F., to a moisture content of 15.5%.

These facilities proved unsatisfactory since it wasn't possible to secure an air-tight seal. In all of the bins containing high-moisture corn, microbial growth had flourished by 50 days after filling. When temperature dropped below 32°, the corn began to freeze and continued to do so to a distance of about 2 ft. within the bins.

There were no obvious toxic effects from feeding the moldy corn. But because of poor growth and great variability of all pigs fed either high-moisture or dry corn in this experiment, we could make no valid conclusions as to feeding value. The results of this test (experiment I) and others are summarized in Table 1, accompanying this article.

Air-tight silos proved to be satisfactory for storing high-moisture shelled corn. It was possible to maintain a sufficient concentration of carbon dioxide to prevent undesirable microbial growth.

Feeding Tests: We conducted another series of tests in 1958-59 to compare high-moisture (25.3%) corn with dry corn self-fed to pigs that also had access to a 33% protein supplement. Two tests were run during the winter months and a third during the summer (experiments II, III and IV in the table).

High-moisture corn was added to self feeders at 5-7 day intervals in the winter and daily during the summer. There were no feeding problems of either freezing or spoiling under these conditions. Both the high- and low-moisture corn and the protein supplement were offered free-choice from self feeders.

In one of the winter tests and the summer test, average daily gains were nearly the same for both low- and high-moisture corn. In the other winter experiment, pigs offered the high-moisture corn gained 10% faster than the pigs offered dry corn.

In all three tests, pigs fed high-moisture corn required more feed per pound of gain, on an equivalent dry-matter basis, than did pigs fed dry corn. But at the same time, pigs fed the high-moisture corn consumed less protein supplement per pound of gain. Also, the protein level of the ration selected by the pigs offered high-moisture corn consistently was below the protein level of the ration selected by pigs offered regular corn.

Of the pigs involved in two of these three tests, 110 were live probed to see if there might be an influence on depth of backfat from using high-moisture corn. Also, 25 pigs were slaughtered at market weights to find any effect of high-moisture corn on carcass quality. We noted no differences in backfat by live probe, in depth of carcass backfat or in dressing percentage.

The next winter, in the 1959-60 tests, corn at four different moisture levels—12, 19.8, 24.7 and 31.9%—was ground and mixed with soybean meal and fortified with minerals and vitamins to form a complete feed for growing-finishing pigs.

Grinding and mixing were necessary at weekly intervals to avoid spoilage, even though the feed was stored at relatively low temperatures. No antibiotics, sources of unidentified growth factors or feed additives were included in the ration. These were eliminated so that any unidentified beneficial factors in the ensiled corn would have an opportunity to exert their influence.

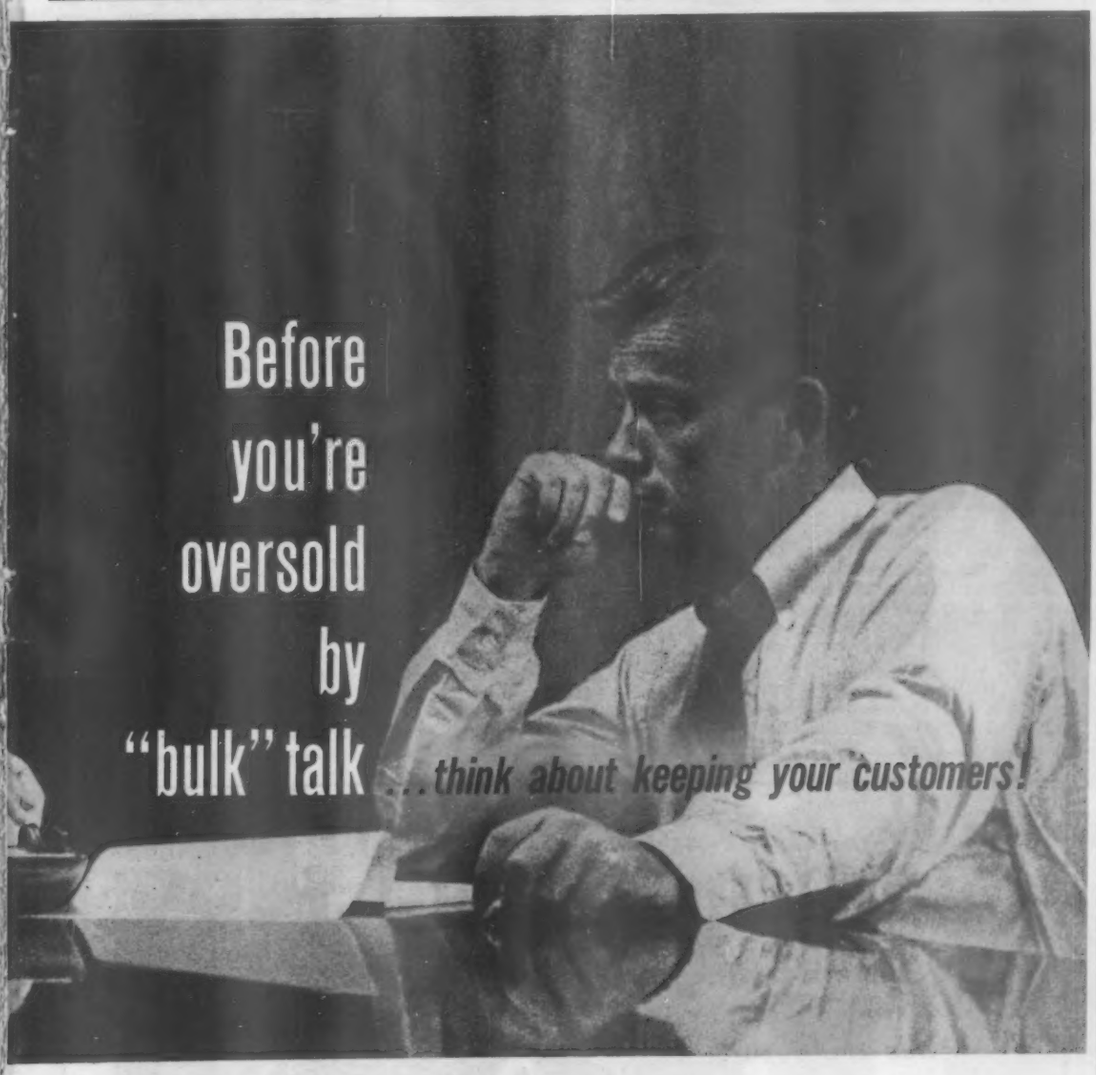
Average Gains: Average daily gains for all four moisture-level treatments were nearly identical (experiment V in the table). Growth wasn't as rapid as might have been expected, but this may have been due to exclusion of antibiotics and sources of unidentified growth factors in the rations.

There were differences in the feed-conversion rates for the corn at different moisture levels. On an actual feed or equivalent dry-matter basis, pigs receiving the dry corn in their ration required 4.7% more feed than pigs receiving the ration including corn at 31.9% moisture. Pigs fed the rations containing corn at 19.8 and 24.7% moisture required 11.4 and 8.2% more actual feed, respectively, than those fed the ration containing corn at 31.9% moisture.

Final experiment (VI) was conducted to see if pigs fed a low-protein, high-moisture corn ration grew as rapidly and were as efficient in feed conversion as pigs fed a low-protein ration containing dry corn. Corn from the same storage units used in the previcus experiment (V) was used.

Soybean meal pellets fortified with vitamins and minerals were added to the shelled corn containing 12, 19.8, 24.7 and 31.9% moisture. Pigs averaging 33 lb. were started on a ration containing 14% protein and were shifted to a 12% protein ration at 50 lb. of body weight. At 125 lb., the ration was changed to include 10% protein until the pigs reached 200 lb. No antibiotics, feed additives or sources of unidentified growth factors were added.

Pigs fed the rations containing corn at 19.8 and 24.7% moisture made identical average daily gains. Pigs fed the ration containing corn at 31.9% moisture gained at a 7.7% slower rate, while those fed the dry-corn ration gained the slowest—16.1% less



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If you want facts, not sales pitch, they are quickly available to you. Just write the Burlap Council. Separation of ingredients in bulk is *negligible in burlap*... breakage and loss in transit *practically eliminated by use of burlap bags.* Other practical advantages, too, like freeing your working capital so it can *work* for you, instead of being frozen in huge capital investment. Form *your own judgment*...on facts. Write today.

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Stable dry vitamin A products.

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Extend your trading area by putting your business on wheels! B&L's big, rugged truck is well balanced for easy positioning in feedlot or barnyard. Saves minutes in set-up and processing time.

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Variable speed on hammermill makes it possible to give customers the type of "granulation control" they prefer. Dust mixing system meets most exacting requirements.

EXCLUSIVE MIX-A-METER

Exclusive calibrated indicator measures feed ingredients, helps operator do his job more quickly and accurately.

BALED HAY FEEDER

Exclusive baled feed table handles whole square or round bales. Another time and labor saver.

ONE-MAN OPERATION

ONE POWER UNIT

GAS or DIESEL*

*Optional equipment includes corn sheller and air unloader.

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TABLE 1. High-Moisture and Low-Moisture Corn for Growing-Finishing Swine

Exp. No.	Corn moisture %	No. of pigs	Av. initial weight (pounds)	Av. final weight (pounds)	Av. daily gain (pounds)	Feed per lb. of gain*	Feeding method
				1958-59			
I†	37.3‡	4	53.2	136.8	1.02	4.65	Complete ration, hand-fed
	29.3‡	4	49.2	134.8	1.04	4.34	Complete ration, hand-fed
	29.3¶	4	48.2	130.0	1.00	4.39	Complete ration, hand-fed
	21.0‡	3	49.0	140.7	1.12	4.08	Complete ration, hand-fed
	15.5§	4	48.8	136.8	1.07	4.32	Complete ration, hand-fed
II**	29.3††	30	78.7	161.4	1.65	3.63	Corn and supplement, free-choice
	14.4	29	73.6	155.4	1.64	3.52	Corn and supplement, free-choice
III**	25.3††	40	62.1	205.8	1.87	3.91	Corn and supplement, free-choice
	14.4	40	62.1	193.6	1.70	3.73	Corn and supplement, free-choice
IV**	26.7††	15	51.8	198.3	1.53	3.75	Corn and supplement, free-choice
	14.4	15	51.9	198.3	1.53	3.52	Corn and supplement, free-choice
				1959-60			
V†	31.9††	6	30.7	190.2	1.53	3.18	Complete ration, hand-fed
	24.7††	6	31.0	189.0	1.50	3.44	Complete ration, hand-fed
	19.8††	5	31.4	197.4	1.54	3.65	Complete ration, hand-fed
	12.0§	6	30.5	189.8	1.54	3.31	Complete ration, hand-fed
VI**	31.9††	19	33.1	190.0	1.43	3.96	Mixed corn and supplement, self-fed
	24.7††	17	33.6	198.2	1.55	3.98	Mixed corn and supplement, self-fed
	19.8††	19	33.1	199.4	1.55	3.96	Mixed corn and supplement, self-fed
	12.0§	18	32.9	181.7	1.30	4.10	Mixed corn and supplement, self-fed

*Feed adjusted to an equivalent dry-matter basis.
†Individually fed.
‡Stored in 300 bu. corrugated steel bin with polyethylene liner.
¶Stored in 300 bu. corrugated steel bin without polyethylene liner.
§Corn dried with air heated to 160° F.
**Group fed.
††Stored in glass-lined, air-tight silo.

rapidly than those making the fastest gains.

The amount of feed required per pound of gain for all pigs receiving the rations containing high-moisture corn was nearly the same.

Pigs fed the ration containing dry corn required 3.5% more feed per pound of gain. (We noted in this experiment that the pigs fed the dry-corn rations had a greater tendency to sort the protein supplement pellets from the shelled corn.)

In summary, according to this series of tests, high-moisture corn is a satisfactory feedstuff for growing-finishing pigs. Thus, this offers an additional use for your high-moisture corn.

But remember, to maintain its quality and nutritional value, high-moisture corn requires air-tight storage and, particularly in warm seasons, frequent removal from storage for feeding.

Swisher Sales Unit Holds Annual Meeting

FRENCH LICK, IND.—The annual sales meeting of the Swisher feed division of the William Davies Co., Danville, Ill., was recently held to launch "greatly intensified sales efforts for their coming fiscal year" which ends next March. The meeting was held over a three-day period here.

The special drive for securing new feed mills was one of the keynote themes of the entire meeting. Dan Lavery, company general manager, reported, "Our program is better-known now and has more to offer than ever before to local feed mills who are gaining in stature every day in the feed business. We have the pioneer program to help these people to be of better service to themselves and their customers."

Robert Freeman, sales manager, presented a program that will be adhered to in the securing of new mills. He also indicated the fact that Swisher sales territory will be largely increased.

A new local level newspaper and direct mail campaign was unveiled for presenting to present Swisher mills in the selling to the feeder-farmer by Henrie L. Miller, advertising manager. He reported that local mills have the opportunity of presenting 56 advertising contacts to the customers in their area in a given year under the present "impact" advertising program.

Louisiana Poultrymen Plan Annual Meeting

BATON ROUGE, LA.—Poultry Industries of Louisiana, Inc., a group representing all phases of poultry production and marketing in the state, will hold its anual conference at the Bellemont Motor Hotel in Baton Rouge on Oct. 2-4, says J. H. Johnson of Alexandria, president of the organization.

Joe Sanderson of Laurel, Miss., president of the National Broiler Council, is among the speakers on the program announced by Clyde Ingram, Baton Rouge, executive secretary of Poultry Industries. Mr. Sanderson's topic will be "Trends in Contract Growing of Broilers."

Frank Sisco of the Broiler Exchange, in Nacogdoches, Texas, will discuss "The Operation of Broiler Auctions." Warren Garrard of the Ralston Purina Co., Atlanta, Ga., will talk on "Quality Control in Egg Production," and R. H. Hendrickson, General Mills, Inc., Minneapolis, Minn., will discuss "New Ideas in Merchandising Eggs."

Registration for the convention will begin at 3 p.m., Oct. 2. More information can be obtained by writing Clyde Ingram, Knapp Hall, University Station, Baton Rouge 3, La.

Canada Turkeys Off

OTTAWA—Number of turkeys on Canadian farms at Aug. 1 this year is estimated at 6,689,000 birds, a decrease of 14.2% from last year's comparable total of 7,793,000.

Based on reports received from turkey producers, estimated output of turkeys in the January-July period amounted to 2,406,000 birds. Between Aug. 1 and Thanksgiving (Oct. 10 in Canada) expected output is placed at 2,511,000 birds and between Thanksgiving and Christmas 3,551,000. Thus estimated output for the full year 1960 is placed at 8,468,000 birds, compared to 10,846,000 in 1959, a decline of 22%.

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the new horseless carriage was the symbol of progress

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Pelleted Dairy Feed Demand Rising, Says Eastern States Co-op

CONCORD, N.H.—A report on the increased acceptance of a new pelleted dairy feed, "Milkerpels," was made recently by the Eastern States Farmers Exchange, Inc.

The report, contained in a recent issue of the Eastern States Cooperator, also mentioned the use of new ingredients, including flaked soybean hulls.

Eastern States officials say that the new concept of formulation results in a high energy pellet balanced at 14%, 16% or 20% protein.

Eastern States pointed out the pellet advantage of no more dairy feed bridging in bulk bins and getting needed nutrients into heavy producers.

Officials also said that Milkerpels "is extremely palatable, provides high energy at low cost and is evaluated weekly."

Eastern States is using soybean hulls and urea in Milkerpels. Officials point out that the hulls are a by-product of manufacturing 50% protein soybean meal. In order to get the higher protein meal, the hull of the bean is sheared off.

One of the prime processors of soybean meal developed a method of cooking and flaking the hull, which brought about a structural change which, in turn, theoretically would improve digestion.

At this point, Eastern States research personnel went to work to try to determine the true value of this product. Previous studies at Ohio State with the artificial rumens indicated that the cellulose content of the hulls was 40.82%, but that, unlike the general rule of thumb, 95.3% of the cellulose of soybean hulls was digestible.

Test Energy Content

Preliminary research at Eastern States indicated that the texture and palatability of soybean hulls made this product a desirable ingredient. The big question was energy content.

Four Holsteins and six Guernseys were placed on a double-reversal feeding trial of 150 days (50-day periods on each feed). The comparison was made between a basic ration carrying hominy and one formulated with 20% soybean hulls replacing part of the hominy.

"No difference between milk production and body weight was found," say officials. "In this trial, soybean hulls apparently proved to be equal in production value to hominy."

Further trials were conducted to determine the energy value of soybean hulls. These trials used cows that were depleted of body reserves. They were placed on rations containing 0, 25%, 50% and 75% soybean hulls. The milk production and body weight responses to these rations were determined in relation to responses from a basic hominy and soybean oil meal feed.

"This trial indicated that soybean hulls have between 96% and 97% the energy value of hominy," said officials. "Hominy is given a value of 84 therms.

"Based on research conducted by Eastern States and later confirmed by Cornell, Milkerpels makes full use of soybean hulls on the basis that it is a high quality source of economical energy in a very palatable form," say Eastern States officials. "The results that Milkerpels has provided dairymen throughout the Northeast have completely backed up the initial work done by Eastern States Feed Research."

Quotes Cornell Study

The Cooperator quoted a research report from Cornell on the comparative value of soybean hulls, oats and citrus pulp for milk production, which indicated that in spite of high-fiber contents, soybean hulls was of equal value to oats or citrus pulp.

Each ton of Milkerpels carries a small amount of urea, officials note. "In addition to its value as protein, research has shown that a low level of urea in providing a readily available source of nitrogen for bacteria to work upon may stimulate greater cellulose breakdown within the cow's rumen," says Eastern States. High levels of urea do not provide this advantage, research shows, and this is the reason only a small amount of urea is included, officials add.

Based on Eastern States and other research, along with experience in distribution, Eastern States officials say they have "absolute confidence that urea is a completely safe and economical dairy feed ingredient."

HATCHERY FORMED

MARION, LA. — Allen Brothers Hatchery, Inc., here has obtained a charter from Secretary of State Wade O. Martin, Jr., to engage in a general hatchery business. The new corporation listed authorized capital stock of $50,000.

Pig Producing Firm Formed in Nashville

NASHVILLE, TENN. — Because the lack of local pork supplies prevented a meat packing company from locating a plant in the Nashville area, a group of Nashville businessmen have formed a new company to grow hogs.

The new company, "Pigs Unlimited," will begin with 1,000 pigs. Later, it hopes to expand to about 5,000 pigs.

Corporation officials are Gov. Bufford Ellington; Earl Herndon, Farm Industries; Jerry Womack, Tennessee Poultry Co., and Russell Brothers, Velvet Ice Cream Co.

Concrete parlors are under construction with facilities for steam cooking of feed, officials said. The activities will be on Gov. Ellington's farm in Williamson County.

"This is not intended as a hobby. It is strictly a business proposition with us and we are hoping to show a desirable profit from our efforts to supply this area with sufficient live animals to justify packing houses locating here," Governor Ellington said.

READY-TO-EAT EGGS?

COLLEGE PARK, MD. — Cornell University studies of consumers in New York state revealed that three-fourths admitted to breakfast without eggs. One-fourth preferred other items to eggs; 18% lacked time for them and only 7% dodged eggs due to washing utensils involved in preparing them.

"This indicates that trends in modern living are apparently favoring ready-to-eat items for the breakfast rush," according to Wade H. Rice, extension poultry husbandman at the University of Maryland here. He further commented, "It looks as if we must supply eggs in ready-to-eat form if eggs are to hold their own in consumption per capita."

Lost salt car proves EV'R-FLO weather resistance!

For nine dripping days and freezing nights last March a hopper car of Carey Ev'r-Flo Salt was held in a feedmill yard. Despite condensation, frost and humidity, and wide variations in temperature the Carey Ev'r-Flo Salt did not set-up in the car, poured swiftly through conveyors and was moved into and out of storage bins without coning or bridging.

CAREY EV'R-FLO...first mixing salt engineered to reduce weather hazards

Flows Fast In All Kinds of Weather! Cone test shows Carey Ev'r-Flo spreads wider, flows faster, disperses more thoroughly to mix with other ingredients. Friction makes ordinary salt flow slower; creates higher cone.

Actually Repels Water! "Laboratory Beaker Test" shows how water penetrates ordinary salt (left); floats on top of Ev'r-Flo Salt (right). This means less caking, lumping or bridging in your equipment.

TRY ONE ORDER AT OUR RISK!
Order a 40-Ton Hopper Car or a Bulk Truckload. If your first order doesn't flow freely and mix easily, your money will be refunded.

CAREY

THE CAREY SALT COMPANY
Hutchinson, Kansas

NOW IN BAGS
And if your mills are not equipped to handle Carey Ev'r-Flo in bulk, you will be pleased to know that now this same high quality mixing salt—Carey Ev'r-Flo is now available in 50 and 100 lb. bags. Take no risk . . . Order a 25 Ton Truckload of Carey Ev'r-Flo in bags. Ideal for batch mixing.

Faith in Growth of Pet Food Industry Expressed at Annual Institute Meeting

CHICAGO—The necessity of "selling the merits" of pet food products and new product developments, along with faith in the continued growth of the pet food industry, were expressed at the recent Pet Food Institute here.

A record 225 manufacturers and suppliers attended the meeting.

A first industry-wide labeling guide was approved unanimously by the board of directors and membership during the meeting. The guide takes cognizance of special labeling concerns and problems peculiar to the pet food industry. The guide points out that rules and interpretations of feed laws do not apply to pet foods as they do to farm feeds, since the largest percentage of food sales is through self-service retail grocery outlets.

In addition to proposed presentation for consideration of feed control officials, the labeling guide is intended to aid members in preparing labels in the best interest of the purchaser.

The institute also named new officers and new members to the executive committee and board of directors (Feedstuffs, Sept. 10). Newly elected to the board of directors are: David Doane, Doane Feed Products Co.; Clarence M. Olson, Swift & Co.; Max Stults, Ralph Wells & Co.; Louis Rosenberg, Thrivo Co., Inc., and Robert D. Usen, Usen Canning Co.

Summaries of some of the talks on the program follow:

EVALUATING THE PET FOOD MARKET — New basic product developments, then telling the consumers about the benefits the product offers through wise use of advertising is one way of making a brand competitive in the pet food industry, according to Paul E. Traum, vice president of A. C. Nielsen Co.

"There must be other possibilities for distinctive demonstrable advantages to form the basis for convincing advertising claims," Mr. Traum said.

Mr. Traum listed a number of important factors which can have a bearing upon the future of the industry. He listed as perhaps the most important: Complacency vs. hard work. Others on the "minus" side were: Restrictive legislation, more apartment dwellers, smaller dogs, higher license and veterinary fees.

On the "plus" side were: Continued population growth, possible new surge in births, prospects for good economic condition, more leisure time, expansion to the suburbs, trend to convenience and greater awareness of good health.

Cites Food Index

Mr. Traum referred to the Nielsen Food Index many times in noting industry figures. He pointed out that industry movement through grocery stores in 1959 was only 3% above 1958 volume, and that this slower rate of growth has also continued through the first part of 1960. During the year ended June 1, 1960, combined pound sales were only 1% ahead of the same 12-month interval of last year, he notes.

"I should repeat that the figures are indexed with sales in 1941 set equal to 100," he added. "In terms of actual pounds, the index figure of 334 for the year ended June 1, 1960, is equal to 2.3 billion pounds. This, of course, is the highest volume ever reported—and is more than three times greater than industry sales of less than 700 million pounds in 1941 or 1947."

Within the total dog food market, Mr. Traum noted a switch in consumer preferences from the canned to the dry types.

Despite the slowup in growth of dog food sales during the past year, Mr. Traum pointed out that all dog food sales during the last year totaled $325 million, the highest on record. He also pointed out that the slowup is quite similar to the trend of total food store dollar sales.

Mr. Traum said that dog foods stand high on the list of 75 packaged grocery commodities on a tonnage basis from April 1, 1958, to April, 1960. He noted that dog foods are exceeded in rate of gain by only three other groups of commodities.

"Thus," he said, "in spite of our slowup in sales trend, total dog food sales growth is well above average." The inclusion of cat foods makes the industry stand out even more favorably on the list.

"In terms of dollar importance within the total grocery business," he said, "total pet food sales are exceeded by relatively few other commodities."

Mr. Traum pointed up the fact that chain food stores are giving more space to all types of pet foods than was the case one and two years ago.

Mr. Traum discouraged the use of cents-off deals, "unless you as individual manufacturers can make more profits by selling a larger number of pounds at a much lower net revenue."

CHAIRMAN'S ADDRESS—"Let's sell the merits of our products in such a way as to convince the pet owner that our products are vastly superior to any other kind of food—even the leftovers from the evening meal," said Joseph V. Getlin, chairman of the board of the Pet Food Institute.

Mr. Getlin urged the industry men not to "waste ammunition" on competitors, but to "go after the vast potential of business we are not getting because of our failure to sell the pet owners on the benefits of the products we make available for them."

He stressed that manufacturers should not cheapen their products by trying to outdo competitors in giving merchandise away.

"If we could, and we can, double pet-food tonnage by earmarking available funds to sell the merits of our products, both we and the trade would reap much greater benefits than either of us are now making when we dissipate our resources through deals and through free goods," said Mr. Getlin.

He pointed out figures that indicated that 68% of all of the food that dogs consume is other than commercially prepared dog food, noting the necessity of increasing the per capita consumption of commercially prepared dog food.

Mr. Getlin said that figures indicate over-all commercial dog food sales in the U.S. in 1959 rose to 2.3 billion pounds. Total dollar sales added up to $324.8 million.

He noted that tonnage increase in 1959 over 1958 was not as great as the 12-month increase in 1958 over 1957, but that growth still was 1%. He pointed out that commercially prepared dog food, both canned and dry, has increased 72% over a 10-year period while total grocery volume has increased 67%. He noted that the dog population has increased at an even higher rate than the human population. "Today there are 26 million dogs in the U.S. and the dog population has been growing at the rate of between 750-900,000 each year," he said.

OPENING ADDRESS — Joseph V. Getlin, Rival Packing Co., retiring board chairman of the Pet Food Institute, gives the opening address of the institute's recent convention in Chicago.

Cat Population Up

He noted the increase in cat population also to about 29 million and the cat food dollar sales to almost $59 million in 1959, up 16% over the 1958 figure.

Mr. Getlin pointed out a number of factors responsible for the industry growth, among them: Population increases—both pets and people; the longer life span of the average dog and cat resulting from better care and nutrition; the growing appreciation of the convenience and economy of pet food by the housewife, and the increase in weight and effectiveness of the manufacturer's efforts,

What Mileage does it cover in a day.

Super-Flo
TRADE MARK

Our Answer:

—We do not gauge a "Super-Flo" Conveyor by Mileage . . . we gauge it by High Capacity and the Performance it renders.

Super-Flo is designed for better service in the handling of free-flowing bulk material. It carries substances to their destination quietly, smoothly *and with a determination not found in other types of conveyors.* The movement is positive, no lagging or crowding . . . no brutal strains upon the operating mechanism.

Super-Flo operates with a minimum of power. The motor drives the chain precisely . . . the supporting members are such that little resistance is encountered. The chain rides on bars that keep it in its path . . . no jumping around . . . no surges. If the load is heavy at any time, it soon assumes a normal attitude by the quick action of the flights, and is carried onward before it has time to build up.

Every action of Super-Flo has undergone deep study! The concept of moving material by paddles (or flights as we term them) has startled the imagination of conveying engineers. Placing the flights and the pulling mechanism within the confines of a single "U" shaped trough has likewise been startling

through advertising and point of sale promotion.

However, Mr. Getlin pointed up a reduction in the industry's rate of tonnage increase in the past 12 months. He noted the reduction in dog population in the past 12 months and gave one reason as the trend in many areas to impose increasingly rigid laws and regulations on dog ownership.

"Possibly another cause in the slackening in our rate of progress is the growing popularity of the smaller dog," he said. "Naturally, none of these dogs have the capacity for eating that the popular breeds of former years had."

Institute's Goals

During his talk, Mr. Getlin listed as the broad goals of the Pet Food Institute:

"To provide pet food nutritional research to our members so that we can continue to improve the palatability and the over-all level of quality of our industry output.

"To build consumer confidence by sound marketing and merchandising practices.

"To provide management throughout our industry with useful and meaningful marketing and statistical services, thus indirectly aiding and improving management decisions.

"To develop guides for our members, which will assist them in meeting state and federal requirements.

"To work toward uniformity of present regulations in order to simplify and to facilitate economic marketing of our products within and among the various states, which will make it possible for us to continue to offer finer quality products at economical prices.

"To act as spokesman for the industry before various legislative and regulatory groups in establishing ground rules which will permit accelerated growth in pet food industry within the framework of our well-thought-out and desirable objectives.

"To create an increasingly favorable public attitude toward commercially prepared pet foods through dissemination of helpful information to both the consumer and the trade.

"To discourage unwise practices that would tend to retard the orderly growth of our industry."

It is estimated that members of the institute produce 84% of all dry dog food manufactured, 67% of all canned dog food manufactured and 61% of all canned cat food.

THE SUPERMARKET OPERATOR TAKES ANOTHER LOOK AT THE PET FOOD DEPARTMENT — "What is there about my product that is economical in terms of the supermarket operator's expensive space and labor costs?"

LeRoy King, editor of Food Topics, urged the pet food supplier to ask himself this question. Another question he posed was: "What is there about my resale product, what is there about my master shipping carton that means less work, less cost to handle?"

Mr. King noted that "when you cut an overhead cost, you directly contribute to net profit. This is just as important as any advertising plan you might have for the future.

"Your advertising message is not enough," said Mr. King. "The dealer expects you to advertise; he demands you advertise."

He urged a stepping up of consumer advertising to "get that profit story across. What do you offer in terms of space? What do you offer in terms of 'magic'? He's got 5,500 items. You've got to come to him with profitable ideas to go along with the merchandise you want him to handle for resale."

Mr. King pointed up good and poor labeling procedures as they affect the supermarket operator and purchaser. He also emphasized the importance of related item merchandising, advising manufacturers to help the supermarket operator at point of sales by encouraging him to display dog food, a traffic item, with high gross profit items, to obtain higher profits from both. He also urged that manufacturers provide operators with point of sale and other merchandising aids.

INDUSTRY OPERATING COST— The importance of costs to the individual company and the importance of industry cost information were reported by Hubert Sherk, account executive, Smith, Bucklin & Associates.

He also discussed the kinds of information that can be secured through an industry statistical reporting program and how the industry statistics benefit institute members.

He noted that industry statistics

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a "Super-Flo" Conveyor . . asked one man

Patented
"TITE-SEAL" COVER AND CLAMPS
HEAVY-DUTY CHAIN WITH FLIGHTS ATTACHED AS REQUIRED
HEAVY STEEL BARS SUPPORT RETURN STRAND
FLIGHTS OF TOUGH NON-METALLIC MATERIAL
"U" SHAPED CONVEYOR TROUGH

CONVEYOR

—(eliminating a return strand). It has proved to be a new and better way of conveying material, *especially where gentle treatment is required.*
Degradation is at a minimum due to smooth operation. The flights travel at a determined speed and wipe the "U" shaped trough clean leaving no material to contaminate. Seeing is believing! When you actually look at a "Super-Flo" in action you appreciate the extreme advantage obtained. The "Super-Flo" is modern and fits today's thinking.

Super-Flo Conveyors can be had with feeds and discharges at any required location. Feed spouts distribute the material so that it flows to the sides of the trough where the non-breakable flights pick up the load easily and carry it on its way.

Write for Bulletin SF-659-A for full details.

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HAMMOND, INDIANA
Southern Plant WINONA, MISSISSIPPI
West Coast Plant SANTA CLARA, CALIFORNIA
Branch Offices: Hackensack, N. J. Dallas, Texas Memphis, Tenn. Tampa, Florida

"give you a yardstick by which to compare your own operations with those of the industry."

It is essential for a firm to review its costs constantly to make sure they reflect current conditions, he said. Analysis might even show that certain well established products or even markets might turn out to be unprofitable.

Joins Arizona Staff

TUCSON, ARIZ.—Dr. Raymond E. Watts began work recently with the animal pathology department at the University of Arizona.

Dr. Watts holds degrees from the University of Illinois and Colorado State College. He has been a practicing veterinarian in Wisconsin, member of the staff at Washington State University and a visiting professor at the University of Punjab in Pakistan.

Letters to the Editor

'How Feed Is Sold'

Washington

To the Editor:

We want to congratulate your paper on the article "How Feed Is Sold." (Editorial, Aug. 27.) This is a problem which has been bothering us quite a bit in the last few years. We are not a new concern, as we have been in business here in the District of Columbia since 1913.

We could give you quite a few ideas on this subject, and we feel that the manufacturers of ingredients, as well as the buyers, are doing themselves an injustice by going direct on most of their ingredients.

We, as jobbers and brokers, as you no doubt know, have to spend a lot of money to keep posted as to the market trends and conditions in all parts of the country. When a buyer is looking for an ingredient, most of the jobber-broker concerns are well posted as to who has the most competitive price.

No one can make me believe that the manufacturer could possibly merchandise his product as cheaply by going direct than he can by going through a jobber or broker, and lots of times the buyer, in listening to a manufacturer, does not buy to the best advantage as he only has the one price before him and is not posted as to what competitors may be offering.

Thank you again for putting this article before the public, and we hope you will have more in regard to this in the future.

D. L. Ashton, President
Green-Mish Co., Inc.

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are the most popular protein supplement and feed mix for dairy cows and cattle.* They include GFF, the Grain Fermentation Factor, and are always fairly and realistically priced. Write or wire today.

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Feed & Grain Division
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Member of The Distillers Feed Research Council

General Mills Holds Feed Dealer Meetings

MINNEAPOLIS—A team of General Mills Feed Division experts held a series of five meeting with Larro SureFeed dealers in four north central states, presenting new ideas for selling and merchandising.

One-day sales conferences were held in Minneapolis; Albert Lea, Minn.; Des Moines, Iowa; Wausau, Wis., and Rockford, Ill. This is the second year in a row that such a seminar has been held by General Mills Feed Division personnel and it will be an annual affair, according to the firm.

Included on the traveling General Mills staff were Kenneth F. Denison, general sales manager for the north central region; Darwin Stolte, livestock management specialist; Bob Christianson, research editor; W. W. Woodward, advertising manager for the feed division, and G. J. Gapp, product manager for dairy cattle feeds. In addition, Don Erickson, Burroughs Corp., accompanied the group and presented a modern accounting system for dealers.

The dealers were also shown two films, "How to Develop a Sales Personality" and "Life's Higher Goal" featuring Bob Richards, director of the Wheaties Sports Federation.

Mr. Denison spoke on the trends of the poultry industry, the need for a uniform and excellent broiler product on the market, the rise in turkey consumption brought on by promotion campaigns and the need for promotion work to bolster the sagging egg consumption.

Mr. Stolte, in addition to discussing the new ideas of livestock management, told the dealers about new livestock feeds on the market.

Mr. Christianson accompanied his talk with slides showing the research and feeding advancements which have been developed on the Larro Research Farm at Indianola, Iowa, and can be adopted by farmers.

Mr. Woodward pointed out the selling and merchandising possibilities offered to the dealers through the Larro Target sales plan. Mr. Gapp discussed the selling and merchandising opportunities in the cattle and dairy industry.

Hoffmann-LaRoche Appointment Told

NUTLEY, N. J. — Dr. Charles R. Adams has joined the animal nutrition division of Hoffmann-LaRoche, Inc., as technical service manager, Carl J. Hasbrouck, director of the division, announced.

Dr. Charles Adams

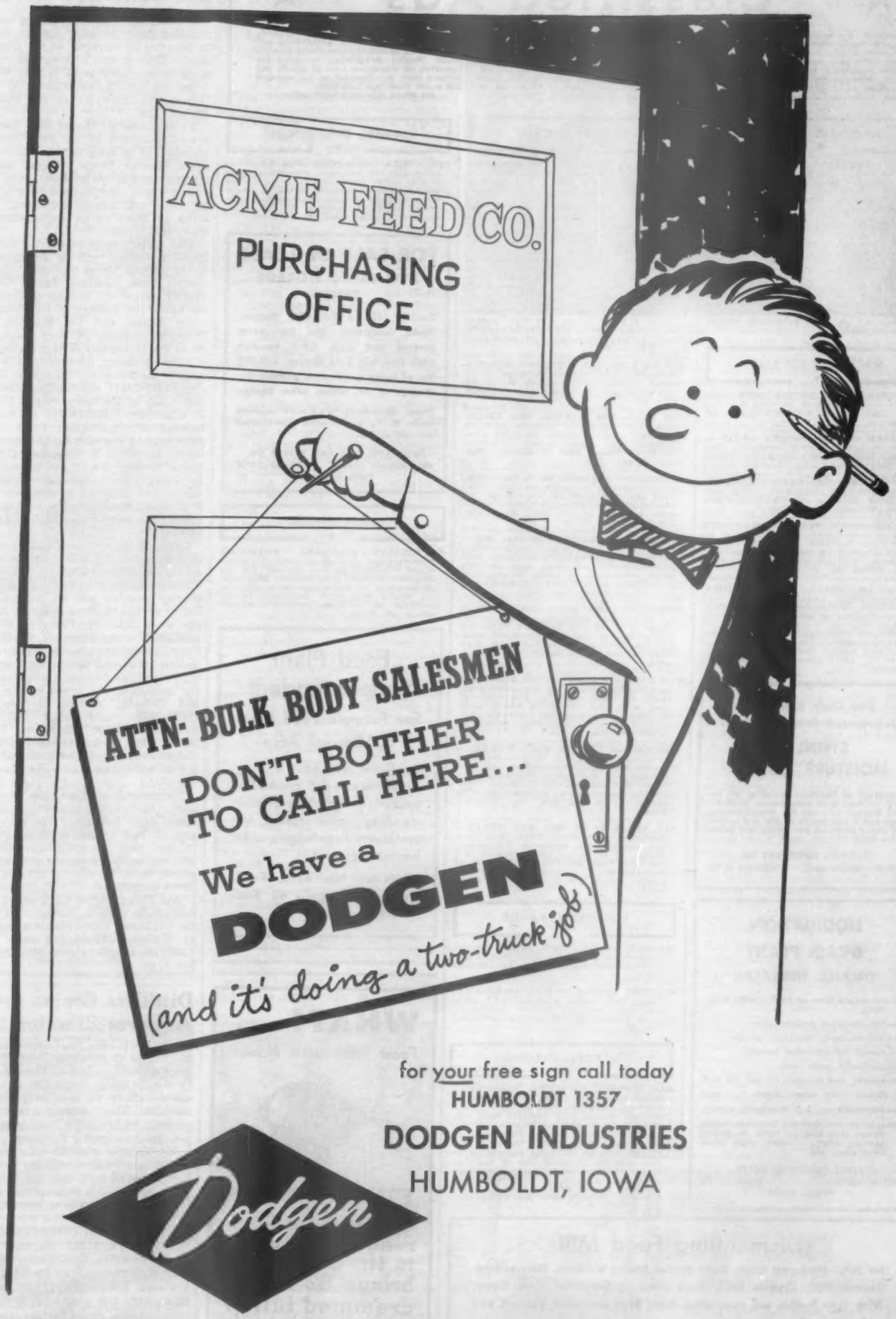
Dr. Adams was formerly associated with Chas. Pfizer & Co., Inc., in Terre Haute, Ind., as head of animal research and with Gooch Feed Mills, Salina, Kansas, as head of technical service. Dr. Adams and his family will make their home in Glen Ridge, N.J.

Technical Director

ST. CLAIR, MICH.—Appointment of L. Robert Strong as technical director at Diamond Crystal Salt Co. has been announced by Karl Klomparens, manager of industrial sales and Mr. Strong's predecessor in the position.

Mr. Strong was previously responsible for production supervision and quality control at Kroger Co., Cincinnati, Ohio.

In his new position, Mr. Strong will be part of a sales team covering baking, canning, confectionery, dairy, feed mixing, meat packing, milling, tanning, textile, water conditioning and other industrial fields, the announcement said.



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Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 20¢ per word; minimum charge $3.00. Situations wanted, 15¢ a word; $2.25 minimum. In figuring cost of your classified ad . . . each word, abbreviation, telephone exchange and number, set of initials, or group of figures counts as a word. To the number of words in your want ad itself add six (6) words for your name and address or name and address of your firm. This applies for both direct-reply ads and for blind ads containing a box number. If an ad is keyed, care of Feedstuffs, 25¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $15.00 per column inch. No discount on ads ordered for more than one insertion. All Want Ads cash with order.

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Ph. D. ANIMAL NUTRITIONIST, FOUR years' industrial experience, seeks broad responsibility with manufacturer of feeds, supplements, pet foods or pharmaceuticals. Address Ad No. 6278, Feedstuffs, Minneapolis 40, Minn.

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TWO CHAMPION MOBILE MILLS—ONE 1956 with horizontal mixer mounted on 1956 Ford. One 1958 model with vertical mixer mounted on GMC truck. Excellent condition. Will sell cheap. Contact Blue Chip Milling Co., Brookfield, Mo.

SEWING MACHINES, CONVEYORS, swinging heads, portables, new and used Fischbeins, Minneapolis, Union Special. Complete stock of parts, needles, oil and thread. Factory trained mechanics for service and rebuilding. Equipment and repairs guaranteed. Surplus machines or equipment bought. Industrial Sewing Machine Co., 11310 Lister, Kansas City 37, Missouri.

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6—Horizontal germ reels.
8—Forster feed grinders, 75 and 100 H.P.
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Also—Screw conveyor and bucket elevators, pumps, steel bins and tanks, dewatering screens, filters, welders, pipe, structural steel, etc.

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MACHINERY FOR SALE

WHIRLAWAY AIRBLAST CAR LOADERS, cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P.O. Box 574, Jefferson City, Mo.

1957 DAFFIN MOBIL MILL ON '57 INternational truck powered by '58 GMC diesel. Excellent condition. Priced reasonably. McArthur Chemical, Eldridge, Iowa; Phone 59613.

PNEUMATIC BULK COMBINATION BAG and bulk, new 2-ton Chevroiet. Will sell as a unit or bed only. McDonald Grain Co., 1725 Southwest Blvd., Kansas City, Kansas; Telephone: Talbot 2-8784.

FOR SALE—WESTINGHOUSE GEARMOtor, 5 H.P., 3 phase, 220 volt, output 155 R.P.M., with Reeves 14 inch. variable speed pulley. Urbana Feed and Seed Supply, Urbana, Ill.

ONE NO. 7 DOUBLE SCREENED EUREKA separator; two 10 bu. Wichkan grain scales in original crates. J. E. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

FOR SALE—1958 DAFFIN, 1956 CHAMpion, 1957 Champion portable grinders mounted on Ford trucks. In extra good condition and priced to sell. Telephone 542-4219, Blume Feed & Milling, Clarinda, Iowa.

CHAMPION PORTABLE MILL, SHELLER, grinder, mixer, molasses on 1959 F600 Ford truck powered by GMC diesel. No reasonable offer refused. Financing available. Address Ad No. 6257, Feedstuffs, Minneapolis 40, Minn.

FOR SALE—ENCLOSED MOTORS; RICHardson scale; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

FIVE NEW "NEW WAY" BULK BODIES on 1960 Fords going at bargain prices. Three 12 ft. all bulk hydraulic units and two 12 ft. bag and bulk hydraulic units. For complete details contact New Way Mfg. Co., 600 East Coast St., Des Moines, Iowa.

FOR SALE OR LEASE—NEW AND USED baby chick-vans and bus type, sizes from 17,000 to 40,000 capacity, also new and used bulk feed trucks or bodies only, all sizes including trailer transports. Immediate delivery. Thompson Sales Co., Phone 838, Searcy, Ark.

1959 DAFFIN MOBILE MILL, POWERED by G.M.C. 4-cyl. diesel, air unloading and the works. Like new condition. 30" Iowa portable mill, mounted on 1957 2-ton Chev. truck, powered by G.M.C. diesel, 2-ton vertical mixer and molasses blending equipment. Mooers Mfg. Co., Windom, Minn.

ALL STEEL BULK BOX AND TRUCK— Simonson combination (bulk and bag) box, one year old, automatic, 7-8 ton capacity, 12 ft. body. 1953 truck in A-1 condition, like new, cheap if taken at once—$2,300. Call or write Sleepy Eye Poultry Clinic, Sleepy Eye, Minn.; SWift 4-4551.

MACHINERY WANTED

WANTED — GOOD USED BULK TRUCK complete or good used bulk body. Cummings Farm Store, Inc., Box 446, Friona, Texas.

WANTED TO BUY — RICHARDSON scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

MISCELLANEOUS

BAG CLOSING SEWING MACHINES— Specializing in making Union Special machine automatic. 80600H tape, 80600E straight sewing and 6000000D tape machine. Also specializing in repairing and overhauling Union Special, Fischbeins and Minneapolis bag closing machines. All repairs done on machines guaranteed for four months. Complete line of bag machines and equipment for sale. Also complete line of parts, oil and thread. We also buy surplus stock. Robert E. Mayse, 620 West Victoria Ave., Montebello, Cal.; PA 2-4087.

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FEED MILL FACILITIES FOR LEASE— Sales $700,000 per year, diversified business in cattle, hogs and poultry as well as grain and farm supplies, 25,000 bu. grain storage. Building and equipment in excellent condition. Address Ad No. 6271, Feedstuffs, Minneapolis 40, Minn.

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NEW LARGE STORAGE TANKS

3—134' dia. x 60' high Vertical Tanks fabricated new but never erected and used. After erection each tank will hold approx. 840,000 bu. of loose grain. Also suitable for storage of oil, water, other liquids.

Priced attractively, prompt shipment Rome, N. Y., or will erect your location and sell or lease.

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HELP WANTED

EXPERIENCED SALESMEN WANTED BY manufacturer of long established quality brand concentrates, has opening for top salesman in Ohio and Indiana. Men with three years or more experience. This is an opportunity with unlimited future. Address Ad No. 6292, Feedstuffs, Minneapolis 40, Minn.

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For Formula Feed Plant in Midwest Area

Applicant must have 4 years' experience in full production operations including product quality, maintenance, mill machinery knowledge and labor management.

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Phone TWinbrook 2-4111 Sherman, Texas P. O. Box 178

Dairy Shrine Club To Honor Leaders

WATERLOO, IOWA — Eight outstanding dairy industry leaders will be honored by members of the Dairy Shrine Club at the 12th annual recognition ceremony to be held in Waterloo on Oct. 5, announces W. T. Diamond, director of the Dairy Shrine Club.

At this year's "Honor Day Ceremony," portraits of six great dairy leaders will be hung in the organization's Pioneer Room. Similar posthumous recognition has been given 97 others whose contributions have been of major and lasting importance in areas of dairy cattle improvement, says Mr. Diamond.

Also, portraits of two living dairy industry leaders will be recognized in the annual "Guest of Honor" ceremony. These men are James Cash Penney, prominent breeder of Guernsey cattle and founder of the Penney chain stores, and Dr. William E. Petersen, professor of dairy husbandry, at the University of Minnesota.

Pioneers being honored this year include the following: Daniel W. Barclay (1872-1944), outstanding breeder and judge of Guernsey cattle; Hugh J. Chisholm (1886-1959), owner-founder of Strathglass Farm and prominent in Ayrshire breed improvement; Dr. Otto F. Hunziker (1873-1959), former Purdue University dairy department, head of manufacturing and director of research for Blue Valley Creamery Co., and an international dairy consultant and lecturer.

Gerrit S. Miller (1845-1937), owner-founder of Kriemhild Herd, one of the first importers of Holstein-Friesian cattle to the U.S., and a charter member and an original director of the Holstein-Friesian Association of America; Percy H. Moore (1883-1959), developer of Colony Farm, an internationally famous Canadian Holstein-Friesian herd whose seed stock has had great influence on the quality of the breed in the U.S. and Canada; William S. Moscrip (1878-1959), outstanding Holstein-Friesian breeder, prominent dairy cattle judge, a founder of American Dairy Assn., and president of the Holstein-Friesian Association of America.

"Organized in 1949, the Dairy Shrine Club meets annually to honor great dairy leaders of the past and present and to inspire those of the future," says Mr. Diamond. "An active scholarship program at graduate school level is also a part of the club's activities."

The Dairy Shrine Club meeting is held each year in conjunction with the National Dairy Cattle Congress, in Waterloo. There are more than 1,200 life members now belonging to the club.

Distillers Grain Acquires Elevator

LOUISVILLE—The acquisition of the former Continental Grain Co. elevator located at 918 S. 13th St. here by the Distillers Grain Co., Inc., was announced by C. N. (Bud) Temple, president. The company was formed recently by Louisville businessmen to acquire the elevator facilities.

Mr. Temple, who has been engaged in the grain merchandising industry for 34 years, said that his company plans to specialize in supplying grains to Kentucky's distilling industry.

FEED FIRM CHARTERED

SANTA FE, N.M.—The New Mexico Corporation Commission has issued a charter to Carr Feed Co., Inc., Portales. The certificate of incorporation says the new company's purpose includes "manufacture and sale of foods for cattle and poultry." Incorporators are Jack E. Carr, Henry R. Carr, Mary L. Carr and Dellas M. Carr.

Dixie Egg Producers Asked to Do Better Job of Packing, Shipping

By ROBERT H. BROWN
Feedstuffs Special Correspondent

ASHEVILLE, N.C.—As a wave of optimism flowed through the Dixie Poultry Institute in the city auditorium last week, a call went out to egg producers of Dixie to do a better job of packing and shipping for export and eastern markets.

Methods of increasing consumption of eggs were also discussed at the meeting (Feedstuffs, Sept. 17).

With rising prices of eggs and expanded layer operations being reported from various sections of the South, George Ehlenberger, Jr., vice president of the June Dairy Products Co., Inc., Jersey City, N.J., a large buyer, said the prospects are much brighter in the South but that it must improve some of its methods of grading and do away with false economies in packing.

"It is my opinion that the packing defects that I, and other receivers of southern eggs, have observed have been largely caused by false economy. A second hand case, torn and stained fillers and flats and a poor trailer may save fractions of a cent, but the reduction in your gross amounts to 1 or 2¢ doz. You must try to do a more adequate, in fact, a first-class packing job," he said.

Buyer Disappointed

Mr. Ehlenberger said he made his first trip into the South a year and a half ago and bought his first eggs, a trailer load. Upon its arrival in New York, he said he was disappointed because the following faults were too apparent:

(1) The trailer had insulation that was broken; there was a hole in the side and also in the floor.

(2) The eggs were packed in second hand cases; there were no inner liners and flats and fillers were torn and stained and appeared to have been used many times.

(3) The cases were not taped lengthwise along the top of the case; they were folded in.

Growing Export Market

He touched upon the growing export market in the South with Georgia now becoming a leading export state.

"Georgia or southern egg producers can increase their profits by following packing and shipping methods that have been proved successful," he said.

He suggested that cases with a minimum 200 lb. test be used for export and that each case have the round medallion stating its test weight.

Also suggested was a check of automatic grading and candling machinery.

"These machines are causing considerable damage. The eggs are being checked, most of the checks being known as blind checks. Many of these machines are not properly adjusted. By all means, keep the machines adjusted, and if necessary call in the representative of the manufacturer and present your problem. Prevent blind checks at the grading sources, and you will be surprised how much better your pack will be received by buyers in the terminal markets. Buyers are not paying top prices for checked or cracked eggs," he continued.

"Egg cases should have an 'S' liner; but if you will not use an 'S' liner, you must surely use a 'Z' liner. One thing every case must have is a firmly anchored center piece whether the eggs are going long distances or are merely being shipped locally.

"Most producers want to ship eggs in 1 doz. cartons to terminal markets. It is extremely important to have carton eggs arrive in good order with no sign of even blind checks.

"Therefore, I believe you will find it necessary to candle before the light by hand all eggs packed in cartons," he continued.

A blind check at the packing plant becomes a broken egg in transit. A broken egg at the receiving warehouse causes three or four additional eggs in the carton to stick. The inspector at the warehouse who finds eggs broken and sticking in the carton often finds it necessary to reject the lot. Surely, eggs in such a condition cannot be placed on the shelves of the dairy section in a market, he pointed out.

It is best to pack three dozen eggs on a flat and then place a flat on top of that three dozen before placing the next three dozen cartons in the case, he said.

The trend, not only in the South, but elsewhere is toward larger laying flocks, Durell Davis, southern editor for Watts Publishing Co., Mount Morris, Ill., said.

The future, he commented, calls for flocks of at least 5-10,000 hens in order to get a reception at the markets.

"The farmer has got to have enough volume to attract the buyers for chains and supermarkets because they don't want to fool with small producers," he said.

Mr. Davis also predicted much of the egg processing would move back to the farms because it can be done much cheaper. With large flocks on hand, farmers can afford the equipment to do the processing and labor will be available. In some instances, the cost has been as much as 31¢ a case less.

More integration is coming in the commercial layer field, Mr. Davis believes. "Just what type of contract or relationship between grower and contractor remains to be seen because the broiler type of contract is not feasible," Mr. Davis commented.

"A man financing a flock of 10,000 layers can go broke in a hurry with the wrong kind of deal."

Mr. Davis also believes there will be more specialization in egg production in the next few years with fewer farms and more emphasis on business methods.

NEW OFFICERS—New officers of the Northwestern Feed Manufacturers Assn. (Feedstuffs, Sept. 17), elected at the first 1960-61 meeting, held in conjunction with the Minnesota Animal Nutrition Course, are, left to right: Robert E. Cunningham, Percy Kent Bag Co., Minneapolis, secretary; Dick Blomfield, Blomfield-Swanson, Minneapolis, president; L. O. Kindstrom, Kindstrom-Schmoll Co., Minneapolis, vice president, and Ivan Scanlan, Minnesota Linseed Oil Co., Minneapolis, treasurer.

For Sale

Practically new Pamco Bulk-Bag Unit mounted on 1958 International chassis Model A-172. Both in excellent condition. Pamco unit used only 3 times. Will hold approximately 8 tons of any combination bulk or bagged feed in 3 compartments. Could be easily converted into 5 compartments. Swivel auger will reach up to 23 feet high. Completely hydraulic driven system. Price, $5,000. Contact H. H. Hise or G. M. Carlson, A. E. Staley Mfg. Co., Box 151, Decatur, Illinois.

BUTTERMILK POWDER for sale, animal grade packed in polyethylene lined bags. Truckload or carload quantities f.o.b. Minneapolis, Minn. Also spray and roller dried whey.

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Fleischmann's F·I·D·Y
IRRADIATED DRY YEAST
RICH IN VITAMIN D FOR FOUR-FOOTED ANIMALS

SPEAKERS — Dixie Poultry Institute speakers included, left to right: Dick O'Connell, American Poultry & Hatchery Federation, Kansas City; Dr. Cliff D. Carpenter, consultant, Arbor Acres Farms, Inc., Laguna Beach, Cal., and John Clark, hatcheryman, Linwood, N.C., chairman of the exposition.

New Booklet Traces History, Uses of Corn

WASHINGTON—"Every time you read a printed page, sign a check or letter, put your shirt on or take it off, you are concerned with one aspect of daily living that industry, working with the American corn crop, has made easier and better."

This statement, appearing in the fifth edition of "Corn in Industry," published by Corn Industries Research Foundation, Washington, is borne out by the booklet's text and illustrations.

In its 64 pages, "Corn in Industry" describes how corn kernels are taken apart to make starch, syrup, sugar, oil and feeds, and how these products enter into the manufacturing processes of scores of food and nonfood industries.

The opening chapter traces corn's contribution to American agriculture and commerce, from farm to finished products. These include scores of foods, paper, textiles, adhesives, dynamite, aluminum, foundry castings, various medicines and many other things.

The development of corn from a wild grass to the specialized hybrids of today is discussed. The book concludes with a look at the future and potential new uses for corn which may result from research.

The new edition is available upon request, without charge, from Corn Industries Research Foundation, 1001 Connecticut Ave., N.W., Washington 6, D.C.

TO MANAGE FLOUR MILL

DENVER, COLO. — Promotion of John Heitz to manager of the Colorado Milling & Elevator Co. flour mill at Lamar, Colo., has been announced by George Hopfenbeck, chairman of the board of Colorado Milling. Mr. Heitz has been assistant manager of the Denver elevators.

GOOD EQUIPMENT
Does Make a Difference
SEND FOR BULLETIN No. 1159
PRATER PULVERIZER COMPANY
1537 South 55th Court — Chicago 50, Illinois

Low Correlation Between Traits Of Flock, Price

COLLEGE PARK, MD. — Work done on the relationship of broiler flock characteristics to prices received indicated the two were not highly correlated when price variations were adjusted for trend, according to a report in the current issue of The Maryland Poultryman.

Factors considered in the analysis included size of flock, age, weight and breed. These factors were not significantly correlated with prices received for birds sold in the area over a two-year period, according to the report. Data included in this study were taken from the records of the Eastern Shore Poultry Growers' Exchange, Inc., and covered the period June 1957-59. A 5% sample of flocks sold was taken for analysis.

Stated purpose of this study was to determine the characteristics of broiler flocks sold in the area to ascertain as far as possible the factors which accounted for variation of prices received for birds which were sold under similar market conditions.

The study indicated that it would be unlikely that one could predict the price a broiler flock would bring on a given day if he had to make this prediction solely on the characteristics of the given flock. In fact, knowing the condition of the flock in advance would be of little value to the grower in terms of his expectation as to the price he would receive. Far more important in estimating price would be good information regarding aggregate supply and demand factors in the market, the study indicated.

Prices received for flocks ranged from 12.6 to 24.2¢ per pound with an average of 18.7¢. Average weighted prices per month ranged from 15.1 to 22.6¢. Prices were lowest seasonally during the period August-December in both years.

The study pointed out the differences in the broiler industry of 10-15 years earlier. Birds marketed in 1947-50 were sold at an average of 89 days as compared with 66.5 days presently. Average weight now is 3.33 lb. compared with the average weight of 3 lb. for the earlier period.

Thus, the growing period has been reduced approximately three weeks and the weight marketed has increased by one-third of a pound per bird. Feed efficiency is known to have improved greatly and growers were able to increase annual production without greatly expanding their productive capacity, the report said.

New Manager

SPRINGDALE, ARK.—Sid Roark has been named manager of the Arkansas Poultry Exchange. He succeeds Henry Thomason who has resigned.

BROILER REPLACEMENT STOCKS UP FROM 1959

★

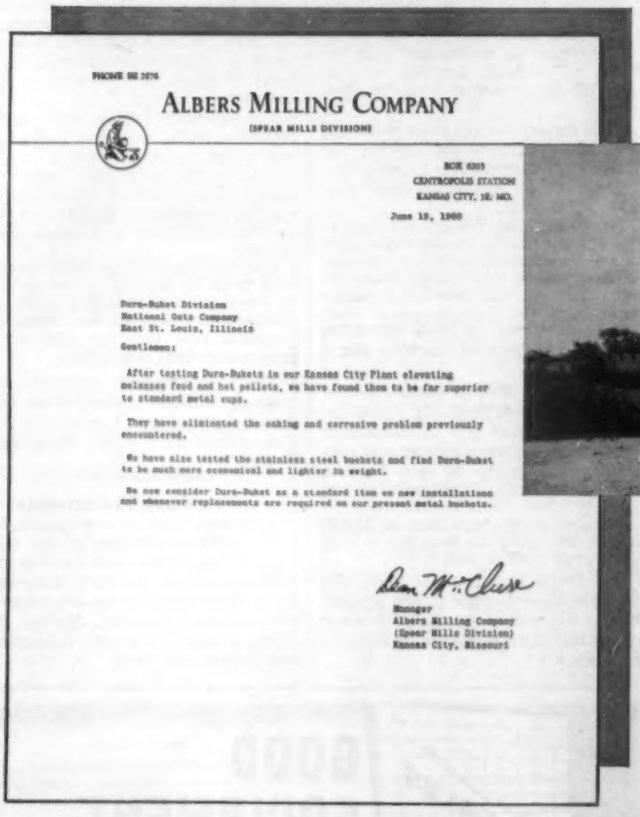
WASHINGTON — Domestic placements of pullet chicks for broiler hatchery supply flocks by leading primary breeders of broiler replacement stock totaled 2,083,000 chicks during August. This was 22% more than domestic placements of 1,706,000 chicks in August, 1959, but was 16% less than August, 1958, the U.S. Department of Agriculture reports. Total placements (domestic plus exports) were reported at 2,283,000 as compared with 1,834,000 a year earlier.

The placement data include pullet chicks sold during the month, plus the number of pullet chicks expected from eggs sold during the preceding month. The conversion from eggs to expected pullet chicks was made on the basis of 125 pullet chicks per case of hatching eggs sold. The primary breeders included in this report account for a very large percentage of total supply of replacement pullets for broiler hatchery supply flocks. Sales of replacement pullets by these breeders provide an indication of the potential number of pullets available for addition to hatchery egg supply flocks several months before the pullets will actually move into the flocks.

"FAR SUPERIOR" Dura-Buket*

ELIMINATES CAKING AND CORROSIVE PROBLEMS

Albers Milling Company of Kansas City tests Dura-Buket for elevating molasses feed and hot pellets. Result? Dura-Buket is chosen for replacement of all metal buckets!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ALBERS MILLING COMPANY
(SPEAR MILLS DIVISION)

BOX 6203
CENTROPOLIS STATION
KANSAS CITY, MO.

June 19, 1960

Dura-Buket Division
National Oats Company
East St. Louis, Illinois

Gentlemen:

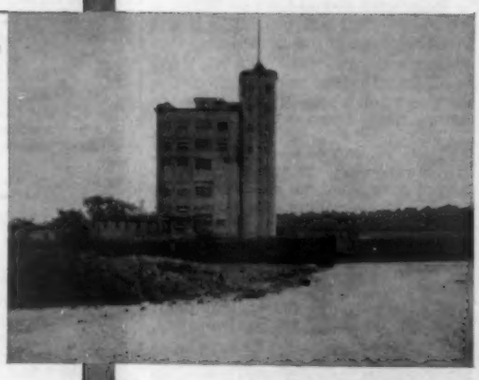
After testing Dura-Bukets in our Kansas City Plant elevating molasses feed and hot pellets, we have found them to be far superior to standard metal cups.

They have eliminated the caking and corrosive problem previously encountered.

We have also tested the stainless steel buckets and find Dura-Buket to be much more economical and lighter in weight.

We now consider Dura-Buket as a standard item on new installations and whenever replacements are required on our present metal buckets.

Dean McClure
Manager
Albers Milling Company
(Spear Mills Division)
Kansas City, Missouri



You, too, can enjoy the money-saving advantages of installing Dura-Buket in your elevating operations

- Strong, shatterproof, rustproof
- Spark and static-free
- High speed, lightweight
- Self-cleaning, can't corrode

*Special plastic by Fiberite Corporation

SOLD NATIONALLY AND IN CANADA BY MILL EQUIPMENT DISTRIBUTORS

Dura-Buket
DIVISION NATIONAL OATS COMPANY • EAST ST. LOUIS, ILLINOIS

Test Compares Light Intensity, Egg Laying

UNIVERSITY PARK, PA. — How does the intensity of light affect production of a laying hen flock? Tests conducted at the University of Pennsylvania indicate that the intensity of light does little to affect rate of production.

Two flocks, each including 2,950 single comb white Leghorn pullets at 22 weeks of age, were included in the laying test. One flock was housed in a windowless house while the other house had a 17% double-pane glass in the front in proportion to the floor area.

The light in the windowless house was furnished with one 100-watt lamp per 150 sq. ft. of floor space. The lamps were placed about 7 ft. above the floor, and light meter readings ranged from 24 foot candles around the feeders and waterers, to one-half foot candle in the darkest corners. The birds were given 15½ hours of artificial light daily.

Light in the house with windows was primarily natural daylight, supplemented with the same amount of artificial light whenever the natural light was less than 15½ hours each day. Light intensity here reached 500 foot candles on bright days and dropped as low as one-half foot candle in the darker areas of the house after darkness.

Egg production was practically the same in both houses — 238 eggs per hen in the house with windows and 242 eggs per hen in the windowless house. On a hen-day basis, the production was 255 and 250 respectively.

It appears from this test that a light intensity created by a 100-watt lamp 7 ft. above the floor per 150 sq. ft. of floor area can give as good egg production as the more intense light afforded on the brightest days.

FEED STORE MOVED

ALBUQUERQUE, N.M.—The Albuquerque Feed Store has moved to a new location and will be a sales outlet for Stollers' Feeds, M. R. Atwater, manager, has announced. The new building is at 1569 Five Points Road S.W. and is the second outlet for Stollers' Feeds in New Mexico. The other outlet is Raton Flour Mill, main feed manufacturing plant for the company. Harold and Glenn Stoller, owners, manufacture a complete line of feeds and also have the only protein block plant in New Mexico producing 36% protein range blocks.

Average Bulk Prices and Index of Weighted Prices*
(Dollars per ton)

	Sept. 20, 1960	Sept. 13, 1960	Change from previous week
OILSEED MEALS			
Prices at prin. mkts.:			
Soybean meal	63.20	63.90	— .70
Cottonseed meal	57.45	57.05	+ .40
Linseed meal	61.40	62.15	— .75
Copra cake or meal	62.25	62.25	...
Peanut meal	55.25	55.25	...
Index	80.2	80.7	— .5
ANIMAL PROTEIN FEEDS			
Prices at prin. mkts.:			
Meat meal	70.00	70.00	...
Tankage	68.90	68.90	...
Fish meal	90.00	89.25	+ .75
Index	64.2	64.0	+ .2
GRAIN HIGH-PROTEIN FEEDS			
Prices at prin. mkts.:			
Gluten feed and meal	44.00	44.00	...
Dist. dried grains	55.60	56.10	— .50
Brewers dried grains	45.20	44.35	+ .85
Index	71.9	71.9	...
WHEAT MILLFEEDS			
Prices at prin. mkts.:			
Bran	37.00	37.10	— .10
Midds. and shorts	37.85	38.30	— .45
Index	67.6	68.1	— .5
OTHER MILLFEEDS			
Prices at prin. mkts.:			
Hominy feed	42.70	42.45	+ .25
Rice bran	29.00	29.00	...
Index	65.0	64.7	+ .3
ALFALFA MEAL			
Prices at prin. mkts.	47.15	47.20	— .05
Index	90.8	90.9	— .1
MOLASSES, FEEDING			
Prices at prin. mkts.	23.89	23.00	+ .89
Index	71.1	68.4	+2.7
ALL FEEDSTUFFS			
Index	74.1	74.4	— .3
FEED GRAINS			
Prices at prin. mkts.:			
Corn	38.60	40.10	—1.50
Oats	43.40	43.60	— .20
Barley	40.70	40.70	...
Grain sorghums	34.50	34.50	...
Index	62.9	64.4	—1.5

*Base period of index is 1947-49.
Source: USDA.

'NO HAY'

(Continued from page 1)

when they are expected to have good stores of carotene and vitamin A and are fed a ration meeting their approximate carotene requirement.

A University of Illinois animal scientist added: "Stilbestrol use apparently does not increase chances of a vitamin A deficiency outbreak in feedlot cattle."

The conclusion that low-roughage cattle rations are efficient in feedlot fattening was made in a report on the effect of feeding four levels of hay with corn silage by Dr. O. E. Kolari, Minnesota assistant professor of animal husbandry.

He said it was found that the average daily gains of steers and heifers fed no hay were 14.8 and 7.6% more, respectively, than steers and heifers fed 6 lb. of hay per head daily. Weight gains of steers and heifers fed no hay, 2 lb. or 4 lb. of hay were almost the same.

When no hay was fed more supplemental protein was required, the test showed. Either 2.5 lb. for the heifers or 2.9 lb. for the steers of a 34-36% protein supplement was needed to balance the ration when no hay was fed. On the other hand, Dr. Kolari noted, only 1.4 lb. of protein supplement was needed to balance the ration for both the steers and heifers when 6 lb. of hay was fed.

"Protein content of the hay fed was low—12-14%," he said. "Had a higher quality hay been fed, less supplemental protein would have been required."

Dr. Kolari reported also that average daily gain of 24 heifers not implanted with stilbestrol was 1.71 lb., while 22 heifers implanted with 12 mg. of stilbestrol at the start of the trial gained 1.91 lb. daily, an increase of .2 lb.

Differences in weight gains of fattening heifers fed either 4, 6 or 8 lb. of hay with a full-feed of ground shelled corn were small, Dr. Kolari stated in reporting the results of other experiments.

"This is not surprising," he commented, "in view of the fact that for the three hay levels fed, the calculated daily total digestible nutrient intakes were 4 lb., 14.36 lb.; 6 lb., 14.26 lb.; and 8 lb., 14.57 lb.

"Although these preliminary results are from only one trial, they do suggest that minimum amounts of hay fed to fattening cattle are not markedly superior to moderate amounts when feedlot performance is the criterion. The effect of roughage level on ribbed carcass grades and ribeye marbling scores will be evaluated after the cattle are slaughtered."

Vitamin A Test

Dr. A. L. Neumann, who reported that tests indicate stilbestrol does not increase opportunities for a vitamin A deficiency outbreak, described tests on an Illinois herd hampered by a shortage of vitamin A.

The off-feed, afflicted animals were split into three groups. Each group included steers which had been implanted with stilbestrol at levels of 0, 12, 24, 36 and 48 mg.

A control group was fed a basic ration of 65% ground shelled corn, 25% ground corn cobs and 10% alfalfa meal. A second group was fed the basic ration plus alfalfa meal, and the third group received the basic ration and a commercial vitamin A supplement.

"In less than a week, both lots of treated steers showed a dramatic increase in appetite with marked improvement in rate of gain and feed efficiency," he said.

Dr. Neumann summarized the Illinois trials:

1. The outbreak occurred in feedlot steers on a ration which furnished about their normal carotene requirement.

2. Previous stilbestrol implantation showed no relation either to the onset of the deficiency or to the rate of recovery.

3. During the period of treatment, the alfalfa meal lot gained 83% more than the controls while the vitamin A supplemented lot gained more than twice as fast as the control lot. Thus, vitamin A supplement appears to give somewhat faster, more effective results than alfalfa meal in restoring animals to normal performance.

4. Liver storage increased progressively with graded levels of supplemental vitamin A but was almost nil in untreated controls.

In Minnesota trials, Dr. Kolari found no effect on feedlot performance of cattle fed massive doses of vitamin A — 100 000 units per head daily—for either 5 or 10 days. However, the blood plasma content of vitamin A was higher for western feeder steers fed massive doses than for steers not fed vitamin A. None of the steers showed vitamin A deficiency.

Heifers fed massive doses of the vitamin had about the same blood plasma vitamin A values as heifers which didn't get vitamin A supplement.

(Further reports of research results told at the Minnesota Beef Cattle-Grassland field day will appear in subsequent issues of Feedstuffs.)

POULT HATCH

(Continued from page 4)

000 other heavy breed poults, January through August, 1960, was up 5% from this period in 1959.

Output of light breed poults in August was up 5% from August, 1959, at 1,124,000. This was the first time this year that the light breed hatch had been above year earlier figures. The cumulative hatch of light breed poults, January through August, 1960, was down 35% from a year earlier.

Total hatch of all breeds during the first eight months of 1960 was approximately the same as hatched during the first eight months of 1959.

NEW MILL

(Continued from page 1)

gravity to move all ingredients through the milling operation. Designed to handle all feed ingredients in bulk, the mill's equipment includes a rail scale and two truck scales, one for weighing in ingredients and one for weighing out mixed feeds.

Seven storage bins will have a capacity of 3,500 tons for the control panel milling operation. An air filtering system is part of the equipment.

NFA officials say that quality control from feed ingredient to final mix will be part of the mill operation.

PIG REPORT

(Continued from page 1)

teer this opinion, they agreed that the Benson corn-feed grain program was functioning desirably up to this time and that corn (and other feed grains) was being chewed up in annual consumption at a rate which amounted to approximately the record crop of last year when USDA lifted acreage restrictions on that crop.

In the corn-cotton legislation which Secretary Benson persuaded Congress to adopt, he appears to have hit pay dirt, and this may be his best contribution to the farm program in face of a Congress reluctant to accept any of his ideas.

Behind the statistical data made available in the pig crop report issued this week is the conclusion that the Corn Belt is fending off the threat of a take-over of feed grain market by the sorghum producers, who are and have been invading the corn market in both cotton and wheat acreage where high price supports and acreage allotments have been turning former corn land into sorghum-producing areas.

Another Factor

The increase noted in the pig crop outlook perhaps must not be wholly assigned to a well-conceived Benson program for feed grains, but, in part, to the fact that red meat animal production appears to be peaking out. As a result, there may be an adequate market at good prices for more pork products next year.

As again in recent past years, the swine farmer is now spreading his farrowing periods into a more even distribution so that the pig market does not reach saturation points as it has in the past. No small part of this more intelligent use of productive facilities must be credited to the feed industry which through greatly improved techniques has made it possible for the swine farmers to develop this newer farrowing system.

While Secretary Benson is entitled to the credit for the feed grain program and its obviously beneficial effects on swine production and marketing, much credit must be given to Dr. Earl Butz, former assistant secretary of agriculture and dean of agriculture at Purdue University, as well as the assistance of Marvin McLain, presently assistant secretary of agriculture, and the current top men of Commodity Stabilization Service of USDA, its director, Walter C. Berger and Clarence Palmby, associate director.

FARROWINGS

(Continued from page 1)

lier in all of the states but South Dakota, Nebraska and Kansas. Decreases recorded by the other states include the following: Ohio and Wisconsin, 8%; Indiana, 6%. Missouri, 5%; Illinois and Iowa, 2%, and Minnesota, 1%.

The Sept. 1 survey indicates that during this fall period, the total number of sows farrowing will be about 10 000 less than last year.

Sows farrowed in the 10 states during June, July and August totaled 2,232 000 head, 7% less than during the same period a year earlier. This was 1% less than was indicated for this period in June.

To counteract this 7% drop from June to August, farrowings from September to November are expected to be up 3% from last year, and 11% above the average. Sows bred and intended for farrowing during these three months total 2,038 000 head. This is 1% more than the farrowing intentions reported in June.

Increase in Winter

Reported breeding intentions for the winter quarter show an increase of 4%, too. The survey shows that an estimated 1,789 000 sows will farrow from December through February, 1961. This compares with 1,713,000 sows farrowed during the same period a year earlier.

All the states, excepting Indiana and Nebraska, indicate more sows will be farrowed during this quarter. Increases include South Dakota, 30%; Iowa, 7%; Ohio, Illinois, Minnesota and Missouri, 5%; Wisconsin, 4%, and Kansas, 2%.

The number of all hogs and pigs on farms on Sept. 1 in the 10 states totaled 45,819 000 head. This is 12% less than the 52,008 000 a year earlier. Decreases in hogs on farms this September compared to last year range from 8% in Ohio to 25% in South Dakota.

Hogs and pigs six months old and over totaled 8,200 000 head on Sept. 1—a decrease of 17% compared to the same time last year. The number under six months of age was 11% less than last September, and pigs from three to six months of age were down 13%.

Pigs under three months of age were 7% below last year and sows farrowed from June-August were also 7% below a year earlier. This indicates that the litter size average for this period was about the same as last year. The 15 616 000 pigs under three months of age on Sept. 1 accounted for 34% of all the hogs. Pigs from three to six months of age totaled 22,003,000 head or 48% of all hogs.

The 10 states included in the USDA study accounted for 73% of the nation's 1959 total pig crop.

Sows Farrowing, Selected Corn Belt States

State	—June through November total— Average 1949-58	1959	1960†	1960 as % of 1959	—December through February*— Average 1949-58	1959	1960	1961‡	1961 as % of 1960
	—1,000 head—			%	—1,000 head—				%
Ohio	334	330	304	92	128	160	133	140	105
Indiana	530	498	468	94	245	315	275	275	100
Illinois	651	829	812	98	213	363	318	334	105
Wisconsin	188	225	207	92	63	121	90	94	104
Minnesota	304	386	382	99	86	188	143	150	105
Iowa	975	1,192	1,168	98	285	537	398	425	107
Missouri	430	526	500	95	154	225	182	191	105
South Dakota	71	99	109	110	20	53	34	47	130
Nebraska	174	196	210	107	58	124	86	80	93
Kansas	102	107	110	103	42	63	52	53	102
Total 10 states	3,759	4,388	4,270	97	1,293	2,149	1,713	1,789	104

*December preceding year.
†Sum of June through August farrowings and September through November intentions to farrow.
‡Number indicated by breeding intentions reports.

The FEED MARKET

PRICE QUOTATIONS, MARKET TRENDS
OF PRINCIPAL INGREDIENTS

NOTE: Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bulk, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.

A AND D FEEDING OIL

Boston: Demand slow; supply plentiful; 400 D, 3,000 A 19¼¢ lb.; 300 D, 3,000 A 19¢; 300 D, 2,250 A 17½¢; 300 D, 1,500 A 16¢; 300 D, 750 A 14¢; 75 D, 750 A 13½¢

New York: Demand fair; trend steady; supply adequate; 1,500 A, 300 D 16¢ lb.; 2,250 A, 300 D 17½¢ lb.

Chicago: Demand fair; trend steady; supply ample; straight A feeding oil, with 10,000 units vitamin A per gram, 7@7¼¢ a, million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

Denver: Demand light; trend steady; supply ample; 21¢ lb.

Minneapolis: Demand fair; supply ample; 10,000 A 31¢ lb.; 300 D, 2,250 A 17½¢ lb.; 300 D, 1,500 A 16¢ lb.; 300 D, 750 A 15⅝¢ lb.

ALFALFA MEAL

Chicago: Demand quiet; trend easier; supply adequate; dehydrated, 17% protein, 100,000 units vitamin A $43.

Boston: Demand good; supply spotty; dehydrated, 17% $55, sacked; suncured, 13% $48, sacked.

Denver: Demand fair; trend steady; supply ample; dehydrated meal, sacked $49; bulk pellets $46.

Los Angeles: Demand slow; trend steady; supply adequate; dehydrated meal, 17% protein, 100,000 A $51; dehydrated pellet meal, 17% protein, 100,000 A $52@54; suncured meal, 15% protein $45@46; suncured crumbles, 15% protein $47@48.

Seattle: Demand fair; trend firm; supply good; 15% protein suncured $49, 150,000 A unit dehydrated $70, both delivered truck loads, sacked.

Philadelphia: Demand slow; supply fair; 17% dehydrated $61.50.

St. Louis: Demand slow; trend steady; supply limited; suncured, 13% fine, sacked $43; dehydrated, 17%, 100,000 A pellets, demand slow, trend firm, supply ample, bulk $44.50.

Omaha: Demand slow; trend strong; supply ample; 17% dehydrated, 100,000 A units, bulk pellets $41; sacked meal $46, Omaha basis.

Cincinnati: Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $50.

Ft. Worth: Demand fair; light offerings; sacked: dehydrated, 17%, 100,000 A $51@52, truck or rail; suncured: 13% ¼ in. grind No. 1 $47@48, truck; 15% fine ground dry $50; with 2% fat added $52, rail or truck.

Minneapolis: Market showing strength; 17% dehydrated, 100,000 A units, reground pellets up from $45 to $47; oiled reground pellets up from $47 to $49.

Portland: Demand good; trend firm; supply adequate; $44@68.90, sacked.

Kansas City: Demand slow; trend steady to stronger; supply adequate; 17% dehydrated alfalfa, 100,000 A on arrival, pellets $40@42, reground pellets $44; 18% dehydrated alfalfa, 125,000 A on arrival, pellets $42@45, reground pellets $46; 20% dehydrated alfalfa, 150,000 A on arrival, pellets $45@50, reground pellets $46@51; suncured alfalfa, demand slow, supplies scarce, 13% pellets $36@37 bulk, No. 1 ¼ in. $38.50, sacked.

Buffalo: Demand fair to poor; trend steady to lower; supply adequate; $54, sacked, Boston.

Memphis: Demand fair; trend steady to higher; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $47.

ANIMAL FAT (STABILIZED)

Louisville: Demand slow; trend easy; supply good; bleachable white 6¢ lb.; white tallow 6¼¢ lb., yellow grease 5¾¢ lb., all in tanks.

Chicago: Demand fair; trend steady to easier; supply adequate; tank truck or carlots, bleachable fancy tallow $5.75 cwt.; yellow grease $5 cwt.

Boston: Demand slow; supply plentiful; tallow 5¾¢ lb., yellow grease 4¾¢ lb.

San Francisco: Demand fair; supply ample; bleachable fancy 6¢ lb.; yellow grease 4¾¢ lb.

Ogden: Supply ample; $5.50 cwt.

Atlanta: Demand fair; trend steady; supply ample; 5⅝¢ lb., f.o.b. Alabama and Georgia processing plants.

Ft. Worth: Demand fair; supply sufficient; prime tallow, tank cars 5½¢ lb., drums 7¢ lb., f.o.b. north Texas packing plants with returnable drums.

St. Paul: Market remains steady; demand good; supply ample; bleachable fancy 5⅝¢ lb., f.o.b. producer's plant.

Salisbury, Md.: Demand good; supply limited; 5½¢ lb.

Kansas City: Demand slow; trend steady; supply ample; stabilized prime tallow 5⅝¢ lb.

BARLEY FEED

Seattle: Demand and supply good; trend firm; $45, truck lots.

Boston: Demand and supply steady; $46, sacked.

Los Angeles: Demand fair; trend firm; supply adequate; standard rolled $3 cwt., standard ground $3 cwt., both sacked.

Ogden: Supply ample; rolled $45@46; whole barley $40@41.

Denver: Demand and supply fair; trend steady; rolled $2.05 bulk, $2.25 sacked.

Chicago: Demand fair; trend firm; supply adequate; $36, sacked.

San Francisco: Demand fair; supply ample; rolled $58, ground $57.

Baltimore: Demand fair; trend steady; supply ample; $46.50, sacked.

Philadelphia: Demand slow; supply fair; $41.50.

Portland: Demand good; trend firm; supply tight; $44@44.50.

BENTONITE (SODIUM)

Chicago: Demand fair; supply ample; trend steady; f.o.b. Wyoming and South Dakota shipping points: 200 mesh $14 and net $13.75; fine granular (80 to 100 mesh) $14.25 and net $14; granular, 30 mesh $16.50 and net $16.25.

Denver: Demand slow; trend steady; supply ample; $24.50, warehouse.

Cincinnati: Demand steady; supply adequate; f.o.b. Cincinnati, minimum 50 ton carlots: 80 granular $31.50, less than carlots $40; 200 mesh fine $31, less than carlots $40.

BLOOD FLOUR

Louisville: Demand slow; trend easy; supply good; $70@75, sacked.

BLOOD MEAL

Los Angeles: Demand slow; trend steady; supply adequate; $6 a unit of ammonia, sacked.

San Francisco: Demand and supply fair; $5.40 a unit of ammonia, sacked.

Omaha: Demand good; trend strong; supply fair; 80% $90, sacked, Omaha.

Chicago: Demand quiet; trend steady; supply fair; 80% protein $115, sacked.

Louisville: Demand dull; trend easy; supply good; $70@75, sacked.

Ogden: Supply ample; $82.50.

Portland: Demand fair; trend steady; supply ample; $110, sacked.

BONE MEAL (STEAMED)

Louisville: Demand dull; trend steady; supply light; $80@85, sacked.

Ft. Worth: Demand fair; supply light; $100, sacked, f.o.b. Ft. Worth, local manufacture.

Chicago: Demand quiet; trend steady; supply fair; $80, sacked.

Boston: Demand and supply steady; $100.

Denver: Demand normal; trend steady; supply ample; $110, Denver.

Los Angeles: Demand and trend steady; supply limited; imported $79.75, 20 ton lots, sacked.

Seattle: Demand good; trend firm; supply limited; $92, sacked, f.o.b. car Seattle.

Cincinnati: Demand fair; trend steady; supply good; $95, sacked, Cincinnati.

Portland: Demand fair; trend steady; supply adequate; $97@97.50.

Buffalo: Demand and supply light; trend steady; $97, sacked.

BREWERS DRIED GRAINS

Philadelphia: Demand fair; supply light; $53.50.

St. Louis: Demand slow; trend steady; supply limited; $40.

Ft. Worth: Demand fair; supply sufficient; 26% protein $49.90, October.

Louisville: Demand good; trend steady; supply normal; $50, sacked.

Chicago: Demand strong; trend sharply higher; supply light; 26% protein $42.

Boston: Demand good; supply light; 24% and 26% $52.

San Francisco: Demand fair; supply ample; $51, sacked.

Los Angeles: Demand and trend steady; supply adequate; $49.50.

Cincinnati: Demand fair; trend higher; supply adequate; $51.

Buffalo: Demand fair; trend steady to higher; supply fair to poor; $53.50, sacked, Boston.

BREWERS DRIED YEAST

Louisville: Demand good; trend steady; supply normal; 10@10½¢ lb., sacked.

Chicago: Demand fair; trend steady; supply ample; 9½@10¢ lb., carlots, sacked; 9¾@12½¢ lb., l.c.l.

Milwaukee: Demand fair; trend steady; supply ample; 10½@12½¢ lb., ton lots, sacked.

St. Louis: Demand fair; trend firm; supply ample; 9½@10¢ lb., carlots, sacked; 10½¢ lb., ton lots; 11½¢ lb., less than ton lots.

Pittsburgh: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New Orleans: Carlots 10¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

New York: Carlots 9½¢ lb., 10 ton lots 10¢ lb.; 5 ton lots 10½¢ lb.; ton lots 11¢ lb. all sacked, f.o.b. New Jersey.

Denver: Demand light; trend steady; supply ample; 9¢ lb.

Los Angeles: Demand and trend steady; supply adequate; 10¢ lb., 5 ton lots; 11¢ lb., 1 ton lots; 12¢ lb., less than ton lots; all sacked.

San Francisco: Demand fair; supply good; 10¢ lb., sacked.

Boston: Demand and supply steady; 11¢ lb.

Seattle: Demand slow; trend steady; supply ample; $12 cwt., sacked.

Omaha: Demand good; trend fair; supply plentiful; 11¢ lb.

Cincinnati: Carlots 11¢ lb.; 5 ton lots 11¢ lb.; ton lots 11½¢ lb., all sacked.

Portland: Demand dependable; trend unchanged; supply adequate; 11@12¢ lb.

Buffalo: Demand fair; trend lower; supply ample; $9 cwt.

BUTTERMILK (CONDENSED)

Philadelphia: Demand slow; supply fair; $4.25 cwt.

Los Angeles: Demand and supply limited; trend steady; 5½¢ lb., 100 lb. lots; 4½¢ lb., 500 lb. lots; both in barrels.

Ogden: Supply good; $4.40 cwt., drum.

San Francisco: Demand fair; supply good; $5 cwt., drums.

Chicago: Demand quiet; trend firm; supply fair; 500 lb. barrels $3.25@3.50 cwt.

Boston: Demand and supply steady; 4½¢ lb.

Louisville: Demand dull; trend steady; supply light; $4.25 cwt., in paper drums.

CALCITE CRYSTALS AND FLOUR
(All prices net, sacked, including freight)

New York: Crystals $16.28, flour $10.28.
Buffalo: Crystals $17.11, flour $11.11.
Toledo: Crystals $18.96, flour $12.96.
Boston: Crystals $17.63, flour $11.63.
Lime Crest, N.J.: Crystals $11.50, flour $5.50.

CALCIUM CARBONATE

Seattle: Demand and trend steady; supply good; $14, sacked, ex-warehouse.

Los Angeles: Demand slow; trend steady; supply adequate; flour $10.15, 20 ton cars; meal $11.15, 20 ton cars; both sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $7@7.50 cwt.

Chicago: Demand fair; trend steady; supply ample; fine grind, plain, 100 lb. bags $9.54; bulk, in hopper cars $7.54; bulk, in boxcars $8.04; granular grind $1 premium.

Minneapolis: Fine grind, 50 lb. bags $12.75; 100 lb. bags $12; bulk, boxcar $10.50; bulk, hopper $10; coarse grind $1 premium, delivered Minneapolis.

CHARCOAL

Boston: Demand and supply light; granular No. 6 $110.

San Francisco: Demand steady; supply ample; $141, sacked.

Chicago: Demand fair; trend firm; supply fair; 50 lb. multiwalls $110.

Los Angeles: Demand slow; trend unchanged; supply adequate; hardwood poultry: $156, less than ton lots; $144.40, ton lots, both sacked.

COCONUT OIL MEAL

San Francisco: Demand fair; supply ample; solvent $61.50.

Los Angeles: Demand and trend steady; supply adequate; copra cake $64, September-October.

Seattle: Demand fair; trend easy; supply ample; solvent type $75, sacked, f.o.b. car Seattle.

Portland: Demand slow; supply adequate; trend unchanged; $71.50.

COD LIVER OIL (FORTIFIED)

Boston: Demand slow; supply plentiful; 300 D, 3,000 A 20¢ lb.; 600 D, 2,250 A 18½¢; 300 D, 2,250 A 18¢; 600 D, 1,500 A 17¢; 300 D, 1,500 A 16½¢.

CONDENSED FISH SOLUBLES

Boston: Demand slow; supply plentiful; 2¢ lb.

Denver: Demand light; trend steady; supply ample; 3¢ lb., West Coast.

Los Angeles: Demand and trend steady; supply adequate; 2@2½¢ lb.

CORN GLUTEN FEED AND MEAL
(All quotations for all cities are bulk basis, sacked basis $5 more)

Minneapolis: Feed $41.60, meal $66.60.
Atlanta: Feed $45, meal $70.
Birmingham: Feed $43.60, meal $68.60.
Boston: Feed $46.50, meal $71.50.
Chicago: Feed $35, meal $50.
Cleveland: Feed $42.90, meal $67.90.
Denver: Feed $45.20, meal $70.20.
Ft. Worth: Feed $43.70, meal $68.70.
Indianapolis: Feed $40.20, meal $65.20.
Kansas City: Feed $35, meal $60.
Louisville: Feed $42.60, meal $66.60.
New Orleans: Feed $44.90, meal $69.90.
New York: Feed $46.10, meal $71.10.
Norfolk: Feed $45.50, meal $70.50.
Philadelphia: Feed $45.70, meal $70.70.
St. Louis: Feed $35, meal $60.

CORN OIL MEAL

Seattle: Demand good; trend steady; supply ample; $55, carlots.

Louisville: Demand dull; trend steady; supply light; $49.60, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $41.

COTTONSEED OIL MEAL

Denver: Demand and supply fair; trend steady; $59.

Ogden: Supply good; 41% $66@70.

San Francisco: Demand good; supply ample; 41% $60.50, 44% $62.50.

Seattle: Demand fair; trend easy; supply ample; $67, f.o.b. car Seattle.

Philadelphia: Demand and supply fair; trend unsettled; $65.50.

Ft. Worth: Demand good; supply very scarce on old process and hulls, sufficient on solvent; 41% old process $61, f.o.b. mills Ft. Worth; carlots, solvent, 2% fat added $56.50 September, $57.50 October-November-December, delivered Ft. Worth; pellets $2 additional; hulls $24.

Los Angeles: Demand slow; supply adequate; $56.

Louisville: Demand fair; trend easy; supply reasonable; new or old process $61.50, sacked.

Omaha: Demand slow; trend steady; supply ample; 41% solvent $59.70, delivered Omaha.

Memphis: Demand poor; trend steady to lower; supply ample; prime 41% protein, old process $53; new process, 41% solvent $50.

Boston: Demand and supply light; $75, sacked.

St. Louis: Demand slow; trend steady; supply ample; solvent $54.

Atlanta: Demand fair; trend steady; supply limited; 41% $55, South Carolina, Georgia and Alabama and $53, Mississippi and Tennessee producing mills.

Chicago: Demand and supply fair; trend higher; Memphis basis, hydraulic $57.

Wichita: Demand fair; supply ample; 41% old process $69, sacked.

Cincinnati: Demand fair; trend steady; supply adequate; $58.60.

Kansas City: Demand improved; supply ample; trend stronger; 41% old process $54@54.50; solvent process $50.50@51, Memphis.

Portland: Demand fair; trend about steady; supply adequate; $63@65.

Buffalo: Demand fair to poor; trend steady; supply fair; $75.50, sacked, Boston.

CURACAO PHOSPHATE

New York: Minimum 14% phosphorus $46.50 sacked, $43.50 bulk, f.o.b. New Orleans, Jacksonville and Philadelphia.

D ACTIVATED ANIMAL STEROL (POWDERED)

Kansas City: Demand fair; trend steady; supply ample; 1,500 ICU 9¾¢ lb.; 3,000 ICU 11¢ lb.

D ACTIVATED PLANT STEROL (POWDERED)

Chicago: Demand fair; supply ample; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots, less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb., ton lots and less 30¢ lb.

DEFLUORINATED PHOSPHATE

Coronet, Fla.: Minimum phosphorus 18%, minimum calcium 31%, maximum calcium 34%, maximum fluorine .18%; guaranteed uniform analysis; carload $66.25, sacked, 100 lb. multiwall bags, bulk $63.25; truck load $67, sacked, in 100 lb. multiwall bags, bulk $64, f.o.b. Coronet, Fla.

Tupelo, Miss.: Minimum phosphorus 14%, minimum calcium 28%, maximum fluorine .14% $57.07, f.o.b. Tupelo in 100 lb. multiwall bags, $54.07 bulk.

Wales, Tenn.: Minimum phosphorus 18%, minimum calcium 33%, maximum 36%, maximum fluorine .18% $71.80 (or $3.99 per unit of P), f.o.b. Wales in 100 lb. multiwall bags, $3 less in bulk.

Butte, Mont.: Minimum phosphorus 18%, minimum calcium 32%, maximum calcium 36%, maximum fluorine .18%, $81 (or $4.50 per unit of P), f.o.b. Butte, 100 lb. multiwall bags; bulk $78; truck loads of less than 10 tons $10 more, bagged or bulk.

Houston: Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .19% $74.35 net ton, f.o.b. Houston, 100 lb., multiwall bags; $71.35 bulk.

Cincinnati: 18% phosphorus $81.03, 14% phosphorus $71.03, f.o.b. Cincinnati.

Portland: Demand fair; supply ample; trend unchanged; $93.50 for product carrying a minimum of 18% phosphorus, 31.5% calcium and a maximum of 0.1% fluorine; $92, dock for a minimum of 10 ton lots.

DICALCIUM PHOSPHATE

Trenton, Mich.: 18½% P $83, bulk, boxcar/hopper car; $86, bagged, in carloads or truck loads; $96 bagged, in less than carload lots; 21% P, $94.65, bulk, boxcar/hopper car; $97.64, bagged, in carloads or truck loads; $107.65, bagged, less than carload; all prices f.o.b. Trenton, freight equalized with nearest producing point.

Chicago: Bulk 18.5% phosphorus, carlots or trucks $83; 20,000 lb. or more $86 net ton in 100 lb. papers; less than 20,000 lb. $96, basis Chicago Heights, Ill., or Nashville, Tenn.; 21% phosphorus, carlots or trucks, bulk $94.65; 20,000 lb. or more, per net ton in 100 lb. papers, $97.65 and less than 20,000 lb., $107.65, basis Chicago Heights, Ill., or Nashville, Tenn.

Bonnie, Fla.: Minimum phosphorus 18¼%, granular, $86 (or $4.65 unit of P), freight equalized from nearest producing point, carload basis; bulk carloads $3 less; in truck loads of less than 10 tons, $10 more. Western slope prices, for delivery at established railroad stations and by truck at regular feed mixing plants: California, Arizona, Nevada and Utah, $99.90; Washington, Oregon, Montana and Idaho, $107.15; bulk carloads $3 less; truck loads less than 10 tons, $10 more.

Columbia, Tenn.: Minimum phosphorus 18.5%, minimum calcium 24% $86, f.o.b. Columbia, in 100 lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

Texas City, Texas: Minimum phosphorus 18.5%, minimum calcium 20%, maximum calcium 23%, maximum fluorine .12%; carload and truck load $80.50, sacked in 100 lb. multiwall bags, bulk $77.50, f.o.b. Texas City.

Denver: Demand fair; trend steady; supply ample; $93.50, delivered.

Cincinnati: 18½% phosphorus $92.15, f.o.b. Cincinnati.

DISTILLERS DRIED GRAINS

Louisville: Demand good; trend steady; supply limited; production light; bourbon grains: light $54, dark $56, solubles $73, all sacked.

San Francisco: Demand fair; supply ample; solubles $79, sacked.

Boston: Demand quiet; supply nil; $60, nominal, October.

Seattle: Demand good; trend firm; none available; $69, sacked, delivered truck lots.

Philadelphia: Demand slow; supply light; $63.

Cincinnati: Demand fair; trend steady; supply adequate; $60.

Buffalo: Demand good; trend steady; supply fair; $62, Boston.

DRIED BEET PULP

Seattle: Demand good; trend firm; supply limited; $52, sacked, delivered carlots.

Atlanta: Demand fair; trend steady; supply limited; new crop $57.50, sacked, delivered, October shipment.
Los Angeles: Demand slow; trend unchanged; supply ample; $45.40@45.50.
Denver: Demand good; trend steady; supply ample; $75, f.o.b.
Ogden: Supply ample; $41@46.
Boston: Demand active; supply scarce; $57, nominal.
San Francisco: Demand good; supply fair; $41.30.
Ft. Worth: Demand fair; new crop offerings just starting; plain or molasses $56 @57, sacked 50 lb. papers, October-November-December.
Portland: Demand slow; supply tight; trend unchanged; $51.60, sacked.
Buffalo: Too scarce to quote.

DRIED BUTTERMILK

Los Angeles: Demand slow; trend steady; supply adequate; 13⅛@13¾¢ lb., sacked.
Boston: Demand light; supply short; 14¢ lb.
Chicago: Medium acid $11.25@11.75 cwt., sweet cream $11.25@11.75 cwt., both sacked.
San Francisco: Demand fair; supply ample; 13½¢ lb., sacked.
Ogden: Supply ample; $15.15 cwt., drum.
Louisville: Demand slow; trend steady; supply normal; $12@12.50 cwt., sacked.
Buffalo: Demand good; trend steady; supply limited; $12.75 cwt.

DRIED CITRUS PULP

San Francisco: Demand and supply fair; meal $48, sacked.
Boston: Demand quiet; supply tight; $47.50, nominal, sacked.
Los Angeles: Demand and trend steady; supply moderate; orange pulp $43, lemon pulp $41.
Atlanta: Demand good; trend steady; supply limited; $47.50@52, sacked, f.o.b. Florida producing plants; meal $40@45.
Buffalo: Too scarce to quote.

DRIED SKIM MILK

Ogden: Supply good; $17.25 cwt.
San Francisco: Demand and supply fair; 14½¢ lb., sacked.
Los Angeles: Demand and supply limited; trend steady; 15¢ lb., less than ton lots; 14¾¢ lb., ton lots; both sacked.
Philadelphia: Demand slow; supply fair; $13 cwt.
Chicago: Demand improved; trend higher; supply fair; $11.25@11.75 cwt., sacked.
Boston: Demand good; supply scarce; 12½¢ lb., nominal.
Louisville: Demand slow; trend firm; supply ample; $12@12.50 cwt., sacked.
Omaha: Demand and trend strong; supply short; 12¢ lb.
Cincinnati: Demand fair; trend steady; supply adequate; 12@13¢ lb., sacked.
Minneapolis: Strong demand has pushed price up from 12¢ to 12¼¢ lb.
Portland: Demand fair; trend steady; supply ample; 13¢ lb.
Buffalo: Demand fair; trend steady; supply ample; $13.35 cwt.

DRIED WHEY

Louisville: Demand slow; trend steady; supply normal; $5.95@6 cwt., sacked.
Seattle: Demand steady; trend easy; supply good; $5.85 cwt., ex-warehouse, l.c.l.
Ogden: Supply good; $6.90 cwt., sacked.
Denver: Demand weak; trend steady; supply ample; $5.75 cwt., delivered truck.
San Francisco: Demand steady; supply good; $5.75 cwt., sacked.
Los Angeles: Demand slow; trend steady; supply adequate; $5.18 cwt., carloads; $5.35 cwt., l.c.l., both sacked.
Kansas City: Demand fair; trend steady; supply adequate; regular or partially delactosed $4.75 cwt., sacked.
Boston: Demand and supply good; 5¼¢ lb.
Chicago: Demand moderate; trend steady; supply ample; $4.75 cwt., sacked.
Philadelphia: Demand slow; supply fair; $6.25 cwt.
Omaha: Demand good; trend fair; supply plentiful; $5 cwt.
Ft. Worth: Demand fair; supply adequate; carlots, standard $5.50, sacked, delivered Ft. Worth; ton lots $5.75, f.o.b. warehouse Ft. Worth.
Cincinnati: Demand fair; trend steady; supply adequate; $5.75 cwt., sacked.
Minneapolis: Demand slow; supply ample; price steady at $5.45 cwt.
Portland: Demand fair; trend steady; supply adequate; $5.95 cwt., sacked.

FEATHER MEAL (HYDROLYZED)

Boston: Demand and supply fair; $69, f.o.b. shipping point.
Los Angeles: Demand fair; trend steady; supply adequate; $1 a unit of protein, sacked.
Atlanta: Demand fair; trend steady; supply ample; $70, f.o.b. Georgia and Alabama processing plants.
Ft. Worth: Demand fair; supply moderate; 85%-87% protein $69, sacked, f.o.b. trucks north Texas plants.
Salisbury, Md.: Demand spotty; supply ample; $70, f.o.b.

FISH MEAL

Ft. Worth: Demand fair; supply of Peruvian limited, menhaden sufficient; sacked: 65% protein Peruvian $94.50, September-October; 60% protein menhaden $102, delivered Ft. Worth.
Seattle: Demand fair; trend firm; supply good; $1.65 a unit protein, ex-dock Seattle, sacked (Alaskan production).
Boston: Demand fair; supply plentiful; menhaden, 60%, sacked $93; red fish, 67%, sacked $88.
Louisville: Demand dull; trend easy; supply light; $110, sacked.
Denver: Demand fair; supply short; $1.54 a protein unit, f.o.b. West Coast.
Ogden: 65% $105@108.
San Francisco: Demand slow; supply ample; $1.50 a unit of protein, sacked.
Chicago: Demand remains quiet; supply liberal; trend easier; sacked: menhaden, East Coast $90@93, Gulf $88@92; menhaden scraps, East Coast $86@89, Gulf $84@88; Canadian herring meal $1.55 a unit of protein.
Los Angeles: Demand good; trend steady; supply light; local production, 60% protein $1.55 a unit, sacked.
Atlanta: Demand good; trend steady; supply limited; 60% menhaden $90@93, sacked, f.o.b. Atlanta and Gulf ports.
Omaha: Demand and supply good; trend strong; 60% menhaden $110, f.o.b. Omaha.
Cincinnati: Demand fair; trend steady; supply adequate; $105.
Portland: Demand fair; trend steady; supply scarce on local supply; imported Peruvian herring $1.50 a protein unit, sacked.

Minneapolis: Demand fair; supply ample; price unchanged; West Coast 60% blended $115, sacked, delivered; Alaskan herring $1.52 a unit, f.o.b. West Coast, subject to production.
Buffalo: Demand fair; trend steady; supply ample; 60% protein menhaden $103 bulk, $108 sacked.

HAY

Ogden: Supply ample; $22 in the field; $25 in the barn.
Ft. Worth: Demand fair for alfalfa, practically nil for others; supply sufficient; carlots, baled, No. 1 alfalfa $40@42; No. 2 $38@40; No. 2 prairie, nominal $30@32; No. 2 Johnson, nominal $28@30, delivered Texas common points.
Boston: Demand seasonally slow; supply adequate; No. 2 timothy $40@43.
Seattle: Demand fair; trend firm; supply good; alfalfa U.S. No. 2 green $34, delivered truck lots, baled.
Philadelphia: Demand slow; supply fair; $24.50@25.50.
Louisville: Demand slow; trend easy; supply good; new hay taking over; local and nearby hay, any variety, No. 1 $28@30, No. 2 $26@28, straw $18@20.
Los Angeles: Demand slow; trend steady; supply moderate; U.S. No. 1 $32@34; U.S. No. 2 leafy $29.50@31; U.S. No. 2 green $31@32; U.S. No. 2 $27@28.
Wichita: Demand fair for prairie, good for alfalfa; supply sufficient; prairie $21@23, alfalfa $22@25, baled.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 timothy $30; No. 2 timothy $27; No. 1 red clover $32; clover mixed with straw $25.
Portland: Demand good; trend firm; supply adequate; alfalfa hay $32@34 ton, baled, Portland-Seattle.

HOMINY FEED

Seattle: Demand fair; trend steady; none available; $54, delivered carlots.
Boston: Demand fair; supply adequate; $50.50.
Chicago: Demand steady; trend firm; supply fair; $40.
Memphis: Demand poor; trend steady; supply ample; white $40.70, yellow $40.70.
St. Louis: Demand slow; trend steady; supply ample; yellow $38.50.
Louisville: Demand slow; trend stronger; supply light; $47.50, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; $42.50.
Kansas City: Demand slow; trend easier; supply adequate; yellow $32.50@33, white $31@32.
Buffalo: Demand and supply fair; trend steady; $50.50, Boston.

LINSEED OIL MEAL

Portland: Demand sluggish; trend unchanged; supply adequate; $81.75, sacked.
Minneapolis: Price up from last week; solvent at $50.50; expeller $57.
Kansas City: Demand slow; trend weak; supply ample; solvent process $50@50.50; old process $56@56.50, Minneapolis.
Boston: Demand slow; supply light; $68.50.
Omaha: Demand slow; trend easy; supply ample; 34% solvent $55.80; 32% old process $62.80, Omaha basis.
Ft. Worth: Demand slow; supply sufficient; 34% protein, solvent $67.50@68, September, rail.
Wichita: Demand fair; supply ample; 34% $78, sacked.
San Francisco: Demand fair; supply ample; $69.50.
Chicago: Demand fair; trend steady to easier; supply ample; Minneapolis basis: solvent $51, expeller $56.50.
Denver: Demand slow; trend steady; supply ample; $68.80, sacked, Denver.
Louisville: Demand fair; trend weak; supply normal; old process $75, new process $69, both sacked.
Los Angeles: Demand slow; trend steady; supply light; local production, 31% protein $73, old crop.
Philadelphia: Demand fair; supply light; 34% $68.20.
Seattle: Demand fair; trend easy; supply good; 34% protein (Montana) $85, delivered carloads, sacked.
Cincinnati: Demand slow; trend steady; supply adequate; new process $52, old process $58, Minneapolis.

LIVER AND GLANDULAR MEAL

Omaha: Demand fair; trend easy; supply plentiful; 65% $175, sacked, Omaha.

MALT SPROUTS

Boston: Demand and supply limited; $48, sacked, nominal.
Chicago: Trend firm; No. 2 $26.
Cincinnati: Demand fair; trend steady; supply adequate; No. 1 $42.60.

MEAT AND BONE MEAL

Omaha: Demand good; trend strong; supply fair; $75.
Ogden: Supply ample; 50% protein $75, sacked.
Chicago: Demand quiet; trend firm; supply ample; 50% protein $77.50, sacked.
St. Paul: Price up from $73@76 last week to $73@78, sacked.
Buffalo: Demand fair; trend barely steady; supply light; 50% meat scraps $70 bulk, $75 sacked.
Kansas City: Demand fair; trend easy; supplies available; 50% $70.
Portland: Demand good; trend lower; supply adequate; $67.50, sacked.
San Francisco: Demand fair; supply ample; $1.40 a unit of protein.
Denver: Demand fair; trend steady; supply ample; $62.50 bulk, $65 sacked.
Boston: Demand slow; supply adequate; $1 a protein unit; converted 50%, $62.50.
Seattle: Demand good; trend easy; supply ample; $1.45 a unit protein, ex-processing plant.
Ft. Worth: Demand fair; supply sufficient; meat and bone, 50% $69 bulk, $72 sacked, f.o.b. Ft. Worth.
Wichita: Demand fair; supply sufficient; 50% $80, sacked, f.o.b. plant.
St. Louis: Demand fair; trend steady; supply ample; $69.
Louisville: Demand slow; trend weak; supply good; $70@75, sacked.
Los Angeles: Demand moderate; trend steady; supply adequate; 50% protein $1.40 a unit.
Cincinnati: Demand good; trend steady; supply fair; 50% meat and bone scraps $71, Cincinnati.

MILLFEED

Minneapolis: Bran and middlings down from $33.50 last week to $32, sacked; red dog steady at $43, sacked.
Kansas City: Demand fair; trend easy; supply ample; sacked, bran $32.50@33, shorts $32.50@33; bulk, bran $29@29.50, shorts $29.50@30, middlings $29@29.50.
Wichita: Demand fair; supply adequate; Sept. 17, basis Kansas City: bran $33.75@34.25, shorts $33.75@34.25; prices were unchanged, compared with the preceding week.
Ft. Worth: Demand fair; supply adequate; bran, bulk $37.50, burlaps $41@41.50; gray shorts, bulk $38.50, burlaps $41@41.50; bulk middlings $38, delivered Texas common points; bulk bran unchanged, sacked bran $1@1.50 lower; bulk shorts 50¢ lower, sacked shorts $1@1.50 lower; middlings 50¢ higher, compared with previous week.
Chicago: Offerings sufficient to take care of demand; prices have weakened; standard bran $34, standard midds. $35, red dog $42.
St. Louis: Demand fair; trend easy; supply ample; sacked, bran $38, shorts $38; bulk, bran $34, middlings $34.
Omaha: Demand fair; trend steady; supply ample; sacked bran $34, sacked gray shorts $34.50, bulk standard midds. $31, all Omaha basis.
Cincinnati: Demand fair; trend steady; supply adequate; bran $39, middlings $40.
Boston: Demand improved; supply spotty; bran $45, middlings $46.
Buffalo: Dribble of local millfeeds available here as the work stoppage at eight Buffalo grain elevators continued despite a State Supreme Court injunction; eastern mixers went West for supplies following news of the continued stoppage; buying flurry sent prices up $2@3 and brought the total rise since the dispute started to $4@4.50.
Philadelphia: Demand and supply fair; trend unsettled; bran $43.50, standard midds. $45, red dog $52.
Louisville: Demand fair; trend steady; supply normal; bran $45.10, mixed feed $45.60, shorts $46.60, all sacked.
Memphis: Demand poor; trend weak; supply ample; wheat bran $36.70, gray shorts $36.70, standard midds. $35.70.
Seattle: Demand fair; trend steady; supply ample; $38, delivered common transit points, carlots.
Portland: Demand fair; supply adequate; trend unchanged; $36@37.
Ogden: Supply good; to Utah and Idaho: red bran and mill run $36, middlings $41; to Denver: red bran and mill run $43, middlings $48; to California: red bran and mill run $43.50, middlings $48.50, f.o.b. San Francisco and Los Angeles.
Denver: Demand slow; trend lower; supply ample; shorts $36.25, bran $36.25, mill run $36.25.
Los Angeles: Demand limited; trend easier; supply adequate; standard mill run $44.50; red bran $47@47.50.
San Francisco: Demand slow; supply ample; millfeed $45, red bran $46.

MINERAL FEED

Wichita: Demand good; supply sufficient; all-purpose with iodine, 50 lb. blocks $97.50, 100 lb. bags $92.50, f.o.b. plant.
Portland: Demand good; trend steady; supply ample; $44@45, sacked.
Sioux City: 50 lb. mineral blocks 8.2% phosphorus $92; 7.5% phenothiazine sheep mineral blocks $4 each.
Ogden: Supply ample; $113 ton in 50 lb. blocks; $103 ton, granular, 50 lb. bags.
San Francisco: Demand steady; supply good; all-purpose with iodine $70, sacked.
Seattle: Demand fair; trend steady; supply good; mixer-mineral $48, all-purpose mineral $85; both ex-warehouse, sacked.
Ft. Worth: Demand fair; supply adequate; all-purpose granules $90, block $70; mineral phosphorus 6% granules $106, block $113; cattle-sheep mineral 7% phosphorus granules $100, block $107; hog mineral phosphorus 3½% granules $87, phosphorus 2% $77 (all in 50 lb. paper bags).

MOLASSES

San Francisco: Demand and supply good; $22.50, f.o.b. cars, Richmond, Cal.
Boston: Demand fair; supply ample; 14¢ gal., in tank cars.
Memphis: Demand fair; trend steady to higher; supply ample; blackstrap 11½¢ gal., tank car, f.o.b. New Orleans.
Buffalo: Demand fair; trend steady; supply adequate; 14¢ gal., f.o.b. Albany.
Kansas City: Demand fair; trend firm; supply tight; blackstrap 11½¢ gal., New Orleans.
Minneapolis: Demand good; supply adequate; $30, tank truck, delivered.
Denver: Demand fair; trend firm; supply ample; 11½¢ gal., New Orleans; $36.37 ton, Denver.
Atlanta: Demand fair; trend steady; supply limited; citrus $18@20, f.o.b. Florida processing plants.
St. Louis: Demand slow; trend steady; supply adequate; 11½¢ gal., tank car, New Orleans.
Ft. Worth: Demand improving; supply sufficient; blackstrap 12½¢ gal., f.o.b. Houston; delivered Ft. Worth, truck $28.07, seller's market price on date of shipment.
Los Angeles: Demand excellent; trend steady; supply ample: $21.50, f.o.b. tank cars; $21.75, f.o.b. tank trucks.
Louisville: Demand fair; trend strong; supply normal; 12¢ gal., tank car lots, f.o.b. Gulf ports.
Cincinnati: Demand fair; trend steady; supply adequate; 11½¢ gal., New Orleans.
Seattle: Demand fair; trend firm; supply good; $21.25, f.o.b. Seattle, tank truck lots.

OAT PRODUCTS

Cincinnati: Demand fair; trend steady; supply adequate; pulverized white oats $45 @52.50.
Louisville: Demand fair; trend steady; supply normal; no changes; reground $25.80, rolled $32.80, feeding $76.80, pulverized $57.30, crimped $64.30, all sacked.
Boston: Demand fair; supply ample; white pulverized $55, sacked; reground oat feed $26, sacked.
Chicago: Demand fair; trend firm to easier; supply ample; reground oat feed $14.50; No. 1 fine ground feeding oatmeal $70; feeding rolled oats $74.
Los Angeles: Demand slow; trend unchanged; supply adequate; local production, pulverized $64, sacked.
Seattle: Demand good; trend firm; supply fair; 38 lb. or better, new crop $54, delivered truck lots.
Philadelphia: Pulverized white, demand slow, supply fair $48.50; domestic, demand slow, supply light $25.30; Canadian oat feed, demand slow, supply very light $32, sacked, nominal.
Memphis: Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $24.25.
Portland: Demand fair; trend strong; supply tight; $54.50@55.
Minneapolis: Steady market, generally; prices unchanged except for reground oat feed which is down $2 to $22, sacked; feeding rolled $76, sacked; feeding oatmeal $64, sacked; pulverized $41.50; crimped $59.50, sacked.
Ft. Worth: Demand slow; supply sufficient; 10% protein oat millfeed $42.20; reground $27.20, sacked.

OYSTER SHELL

Boston: Demand and supply steady; in paper $26.05.
Seattle: Demand and trend steady; supply good; eastern $36, delivered carlots, sacked.
Louisville: Demand slow; trend steady; supply good; in 80 lb. paper sacks $23.45, in 50 lb. paper sacks $23.70, in 25 lb. paper sacks $25.95.
Portland: Demand fair; supply adequate; trend unchanged; $27@35, sacked.
San Francisco: Demand fair; supply ample; local $15, eastern $26, sacked.
Los Angeles: Demand steady; trend unchanged; supply ample; $15.40, sacked.
Cincinnati: Demand fair; trend steady; supply adequate; 80 lb. bags $23.85; 50 lb. bags $24.10; 25 lb. bags $26.35.

PEANUT OIL MEAL

Atlanta: Demand fair; trend steady; supply limited; 45% $55 for expeller, $51 for solvent, f.o.b. Alabama and Georgia producing mills.

PEAT MOSS

Seattle: Demand fair; trend firm; supply good; $2.85 bale, delivered truck lots.
San Francisco: Demand and supply fair; $3.65 bale.
Los Angeles: Demand steady; trend unchanged; supply ample; Canadian 5.6 cu. ft. bales $3.65.
Chicago: Demand and supply fair; trend firm; standard 7½ cu. ft. bale $3.80.
Portland: Demand fair; supply ample; trend unchanged; $3@3.15 per 5.6 cu. ft. bale.
Boston: Demand and supply steady; $3.15 a bale in carlots.
Philadelphia: Demand slow; supply fair; $2.85 a bale, f.o.b. pier.
Cincinnati: Demand good; supply good; truck loads $3.45 a bale, f.o.b. Cincinnati.

POTASSIUM IODIDE (U.S.P.)

Chittenango, N.Y.: Demand good; trend firm; supply ample; standard blends, 90% KI, 10% stearate or carbonate mixture: 100 lb. drums $1.25½ lb.; 200 lb. and up $1.23½ lb., all delivered.
Cincinnati: Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures: 250 lb. drums $1.35; 200 lb. in 100 lb. drums $1.35; 100 lb. drums $1.38; 25 lb. drums $1.41, f.o.b. Cincinnati.

POULTRY BY-PRODUCTS

Boston: Demand fair; supply tight; $70, f.o.b. shipping point.
Los Angeles: Demand fair; trend steady; supply adequate; $1.25 a unit of protein, sacked.
Atlanta: Demand fair; trend steady; supply ample; meal $71, f.o.b. Alabama and Georgia processing plants.
Ft. Worth: Demand fair; supply sufficient; 55% protein $77.50, nominal, sacked, f.o.b. north Texas plants.
Salisbury, Md.: Demand good; supply ample; meal $77, f.o.b.

RIBOFLAVIN

Cincinnati: Trend steady; feed grade (in feed supplements) 4¢ gm. in less than ton lots at 3.36 to 16 gm./lb. mixtures; 3¢ in ton lots or more, freight prepaid or paid to destination.

RICE BY-PRODUCTS

Los Angeles: Demand limited; supply very limited; trend steady; California production, high fat content, bran $49@50, sacked.
San Francisco: Demand good; supply ample; bran $43, polished $47, both sacked.
Ft. Worth: Demand good; supply scarce; rice bran $34@35, f.o.b. south Texas rice mills, sacked; hulls $4.50, sacked, f.o.b., September delivery.

SCREENINGS

Chicago: Demand and supply fair; trend firm; ground grain $32.40; Canadian $24.90.
Buffalo: Demand and supply fair; trend steady; ground, sacked $33.25, New York, lake and rail; unground, bulk $28.50, New York.
Minneapolis: Supplies tight; movement slow; Canadian up again to $21, Duluth; domestics in same ranges which have prevailed for several weeks; lights $8@12, mediums $13@20, heavies $21@30; 15% flax screenings steady at $32.
Cincinnati: Demand fair; trend higher; supply adequate; unground grain screenings $21@22.

SOFT PHOSPHATE WITH COLLOIDAL CLAY

(Sacked

Atlanta: $20.40@20.67.
Buffalo: $25.31@25.45.
Chicago: $24.77@24.90.
Cincinnati: $23.47@23.60.
Des Moines: $25.23@25.35.
Kansas City: $24.88@25.
Memphis: $22.20@22.47.
Minneapolis: $25.93@26.06.
Philadelphia: $24.32@24.95.
St. Louis: $24.14@24.37.

SORGHUMS

Ogden: Supply good; milo $43@44.
Los Angeles: Demand steady; trend easier; supply adequate; milo $2.07½ cwt.

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Seattle: Demand fair; trend steady; supply good; milo $47, delivered, carlots.
Ft. Worth: Demand fair; offerings increasing; No. 2 yellow milo $1.88@1.90 cwt., delivered Texas common points.

SOYBEAN OIL MEAL

Wichita: Demand good; supply ample; 44% $63, 50% $69, sacked; 44% $60, 50% $66, bulk, f.o.b. Wichita.
Boston: Demand fair; supply plentiful; 44% $50, 50% $54.50, both f.o.b. Decatur.
Denver: Demand fair; trend firm; supply ample; 44% $65, Denver.
Atlanta: Demand fair; trend steady; supply ample; 44% $60.50, delivered.
Omaha: Demand slow; trend steady; supply tight; 44% $56.60, delivered Omaha.
St. Louis: Demand slow; trend easy; supply ample; 44% $55.
San Francisco: Demand fair; supply ample; $76.40.
Memphis: Demand fair; trend steady; supply ample; prime 44% solvent $58, f.o.b. Memphis.
Ogden: Supply good; 44% protein $72@74; 50% protein $77@79.
Los Angeles: Demand slow; trend easier; supply increased; $74.90.
Portland: Demand slow; trend barely unchanged; supply tight, but adequate; $74.90 @75.90.
Kansas City: Demand slow; trend steady; supply adequate; 44% solvent process $51@ 51.50, Decatur.
Minneapolis: Demand fair; supplies adequate; slight price weakening; 44% solvent at $48.50, Decatur; 50% solvent $53@ 53.50.
Chicago: Demand and offerings both somewhat slow. Prices have been trimmed, particularly on eastern trunk line offerings, and they are down about $1.50 ton. Unrestricted billing offerings are no worse than steady to 50¢ off for the week. Quoting, Decatur basis: 44% unrestricted $53.50 @54, eastern trunk line $50; 50% unrestricted $57.50@58, eastern trunk line $54.
Seattle: Demand good; trend firm; supply ample; $75, delivered, carlots.
Philadelphia: Demand and supply fair; 44% $52, Decatur.
Ft. Worth: Demand good; offerings light for immediate shipment; 44% $52.30, October-November-December; 50% $57.80, October-November-December.
Cincinnati: Demand fair; trend steady; supply adequate; $54, Decatur.

TANKAGE

Ft. Worth: Demand fair; supply ample; 60% digester $75, sacked, Ft. Worth.
Chicago: Demand slow; trend firm; supply fair; 60% protein $77.50, sacked.
Louisville: Demand slow; trend weak; supply good; $70@75, sacked.
Omaha: Demand good; trend strong; supply fair; $75.
Wichita: Demand fair; supply sufficient; 60% $80, sacked, f.o.b. plant.
Kansas City: Demand fair; trend steady; supply tight; 60% digester $70.
St. Paul: Steady market; price unchanged; $72@74, sacked; bulk $68@71.
St. Louis: Demand slow; trend steady; supply ample; $70.
Cincinnati: Demand fair; trend steady; supply good; 60% digester $71.50, Cincinnati.

UREA FEED COMPOUND

Pryor, Okla.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b., bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.
New York: Minimum 42% nitrogen, 262% protein equivalent, $100, f.o.b., bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.
Belle, W. Va.: Minimum 42% nitrogen, 262% protein equivalent; $100, f.o.b., bagged; $96, bulk, cars or trucks, freight equalized with nearest producing point.
Woodstock, Tenn.: Minimum 42% nitrogen, 262% protein equivalent; $100, bagged, f.o.b., freight equalized with nearest producing plant; bulk $96.

VEGETABLE AND ANIMAL FAT (HYDROLYZED)

Ft. Worth: Demand good; supply limited; 5½¢ lb., f.o.b. south Texas area.

VITAMIN E FEED SUPPLEMENT

Cincinnati: Demand good; trend steady; 50 lb. or more $1.45; less than 50 lb. $1.50; freight allowed to destination.

WHEAT GERM MEAL

Minneapolis: Price up sharply to $74, jutes.
Buffalo: Too scarce to quote.

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SCHOOL

(Continued from page 1)

held Sept. 21-23 at the Hotel Continental, attracted some 635 feed men from 40 states, seven Canadian provinces and seven foreign countries. Because of the FDA discussions in particular, the program drew a large attendance of nutritionists and mill management personnel as well as operating personnel.

The FDA compliance talks highlighted the view that when it comes to medicated feeds, all business is interstate and, as an FDA official put it, "Anyone who gets his finger into the chain of distribution accepts a degree of responsibility for what he is handling"—from the original drug supplier through the local or custom mill and on into the feedlot.

"You Are in Drug Business"

Alfred Barnard of the FDA office in Kansas City put it this way: "When you go into the medicated feed business, you should recognize that under terms of the Food, Drug and Cosmetic Act, you are in the drug business. You are no longer in the feed business as you were back in the good old days.

"The FD&C Act applies to both foods and drugs for human use and foods or drugs for veterinary use. I would like to emphasize that you are dealing with extremely potent and potentially dangerous substances. The mixing of medicated feeds should, insofar as possible, be regarded as a drug-compounding operation and not as simple feed mixing. What would your reaction be if your local druggist filled one of your prescriptions under conditions such as you have seen in some feed manufacturing establishments?"

(Summaries of the FDA and some of the other production school discussions will be presented in Feedstuffs later.)

SEMINAR

(Continued from page 1)

contract form includes a warranty clause intended to help protect the feed industry from unwarranted claims by buyers and in general provide terms fair to both the feed seller and buyer.

Special Attention

The subject of product complaints was given special attention in a talk by E. C. Fuller, executive vice president of Nutrena Mills, Inc., who urged a tougher attitude on the part of feed companies in meeting such claims.

"Some manufacturers have adopted a tougher policy on product complaints, but it's an industry problem that will respond best to a broader approach," Mr. Fuller said.

The seminar, which included an afternoon workshop session on organizing and operating a sales training department and salesmen compensation plans, also provided a highly-interesting peek into the future through the eyes of five industry executives. (See other stories on pages 1 and 8. Additional reports on seminar proceedings will appear in subsequent issues of Feedstuffs.)

Robert Emmons, Wirthmore Feeds, Inc., was named chairman of the council to succeed Mr. Miller. Named vice chairman was Darrell M. Runke, Supersweet Feeds; J. C. Huckabee, Quaker Oats Co., was chosen secretary.

Steps Suggested

These steps, suggested by Mr. Fuller, could "whip the product complaint problem in short order" if followed consistently by most feed manufacturers:

1. Review the "warranty" on your invoices and sales contracts. If you haven't got one, ask your legal department or attorney to put one in. The uniform sales contract will provide a good example.
2. Review the subject with your sales force, pointing out that because so many factors affect performance, you do not warrant your products to deliver any certain level of efficiency, nor do you warrant them to equal or exceed competitive products in performance. Caution against unauthorized verbal or written promises or guarantees.
3. Adopt a quality control program that not only protects adequately against mixing errors but also identifies shipments with mill runs and lab reports.
4. Investigate all complaints promptly and fully. Train sales personnel to take composite samples with the customer present and mail to an outside lab, as well as your own lab. While helping the customer run down all possible causes of trouble, run lab tests on feed samples, and feeding trials wherever possible.
5. If the feed is found to be faulty, make proper restitution promptly and in full. If there is no definite proof of substandard feed, make no adjustment. Explain your policy politely but firmly, and stick by it. Collect and document all possible facts supporting your case. If the account is in arrears, press for collection.

One Leads To Another

Mr. Fuller pointed out that one settlement of a product deficiency complaint often brings forth a rash of complaints in the same area as soon as the word gets around, many of which are obviously with no possible foundation.

"Another significant observation is that complaints come most frequently when end product prices are low, from producers who are underfinanced, running in the red and unable to pay their bills on schedule," he said. "Attorneys skilled in the fine art of drawing a bead on the feed manufacturer are in popular demand and are frequently willing to take product complaint cases on a percentage of settlement basis. The feed industry itself has established the highly favorable odds."

The feed industry, he said, has inadvertently taught the customer to think first of the feed when he runs into trouble.

Representative Named

ANOKA, MINN.—Francis H. Berhow, Minnesota Lakes, Minn., has been appointed district sales representative for Ghostley's Poultry Farms here.

Mr. Berhow will cover eastern Minnesota, Wisconsin and parts of Iowa and Illinois, according to Fred Ghostley, general manager of Ghostley's Poultry Farms.

PANEL

(Continued from p

"The government programs that were introduced during the war period for the purpose of increasing production of feed grains has not been abandoned in spite of the peacetime era. The program seems to have become a permanent part of the political scene in our field of agriculture," he said. "The result has been to keep certain feed costs higher than would normally be the case and with the increasing supplies of food products we have seen the period of a cost-price squeeze that has left the farmer and those interested in his

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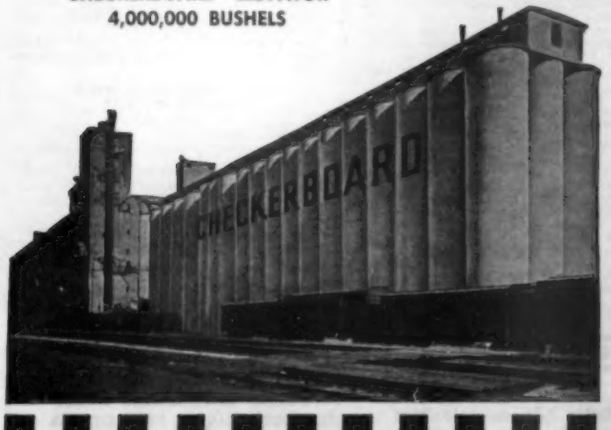

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market in a position of economic concern.

"During the late 1950's, we witnessed, among other changes in our industry, the beginning of some forms of integration, particularly in the poultry segment of the feed business," said Mr. Griffin. "We witnessed the increasing need for feeder financing. We saw the trend toward the use of concentrates with local grain. We saw the feed manufacturers make facility loans to assist distributors in the handling of the grinding and mixing of concentrates and grains at the local level.

"The period of the 50's saw many feed manufacturers adjust from the large production unit to smaller and better distributed manufacturing units. We witnessed the beginning of the use of bulk feeds during the past 10 years and we saw the need for capital on the part of the distributor who needed to spend money to modernize his distribution system to serve his customers with bulk."

Another very important observation of the late 50's, according to Mr. Griffin, was the use by some manufacturers of promotion schemes that were expensive to begin with and perhaps unsound from the standpoint of lasting good. In the past few years, there have been many liquidations, mergers, acquisitions and various other combines amongst the manufacturing group.

"Perhaps there has been no more dynamic period in our industry than that represented by the 50's. We now face the challenge of trying to figure out the period which lies ahead," said Mr. Griffin. "We are providing, through the medium of a panel of experts, some thinking that will project us into the next ten years. Suffice to say there is no one who knows for sure what we will be doing as feed people in 1970. We do agree I am sure that the 60's will be just as challenging and full of change as were the 50's."

Will the Feed Industry Be Selling Any Complete Feeds in 1970?—"I'm predicting that we'll be selling more complete feed in 1970 than we are now," said Claude I. Carter, vice president of Alabama Flour Mills in Decatur, Ala. "Whether I'm right or not, depends a lot on the actions of the feed manufacturing industry during the next nine years, however."

Mr. Carter feels the feed industry hasn't finished growing up yet. He says that manufacturers spend too much time worrying about whether or not their price is competitive, or whether or not someone else is making a deal with a good customer.

"When we grow up," he says, "we'll admit that there's no magic involved in this business; that there just plain isn't a great deal of difference in our manufacturing, sales, administration and other costs between companies.

"It doesn't make sense that our company, or yours, should be offering a similar product at a price of $5 or $10 ton cheaper. It doesn't make sense for us to keep trying to undersell our competitors."

In taking a look at what the customer will be like in 1970, Mr. Carter pointed out that most of them will be larger, more specialized and more vulnerable to this "so-called on-the-farm mixing trend that is taking place today."

"Customers offering specialization and size mean there will be a real opportunity for the feed industry to prove the economies of buying a complete feed from a reliable manufacturer," said Mr. Carter.

New Competitors

"Our suppliers, in many instances, are becoming our competitors. In some instances, our vitamin suppliers are encouraging large operators, who are using our concentrates, to go basic. They often forget to point out to their prospective customers (now our customers) the many added costs this method will bring about.

"Machinery salesmen are roaming the back roads selling plans which aren't always sound, too. In a recent survey, we found this salesman wants to know three things: (1) What are you paying now for a complete feed, (2) what could you buy concentrate for and (3) what would you have to pay for local grain?

"With a little mathematics, he comes up with a good story on ingredient cost—and you and I know it isn't always true.

"Beef cattle feeds are now being manufactured more and more on a complete basis. The trend is already well underway in the dairy business, too. As these large specialized operations come into existence, it gives the feed man an opportunity to analyze the operations, to get the true facts of what is needed, and to sell feed accordingly.

"Those of you attending this marketing seminar, as leaders of your sales organizations, will have an important bearing on the route that we take during the next nine years. I challenge you to take what looks like a problem today, and turn it into an opportunity tomorrow."

Will There Be Feed Dealers in the Feed Distribution Picture in 1970?—D. K. Webster, Jr., president of the H. K. Webster Co. in Lawrence, Mass., said he feels that those feed dealers who are willing to adjust their operations to fit our changing agriculture will definitely be in the feed picture in 1970.

"There probably won't be as many dealers, and they will be bigger and better operators," said Mr. Webster, "but they will still be in the business because of a successful adjustment to changes in local agriculture."

Mr. Webster prefaced his answer with three qualifying statements. He said the answer is based on (1) the assumption that there will be no major war during the coming 10 years; (2) that there will not be any radical legislation along the lines of price supports and production controls on poultry or any other part of animal agriculture which could materially affect patterns of production and distribution, and (3) the fact that his comments might not have equal application in all areas since he is "more familiar with feed distribution in the northeastern part of the United States than with the program in the west and southwest areas."

"A pattern of distribution such as we have in the feed industry does not just disappear in as short a space as 10 years," Mr. Webster pointed out. "It does change, however, and the successful operator adjusts to this change.

"We can't fail to observe and evaluate changes going on with our farm customers. And we must be realistic and recognize that the pace of the adjustment is accelerating. The changes occurring during the next 10 years will be greater than the changes in the past decade."

Manufacturers' Interest

Mr. Webster said that all members of the feed manufacturing industry have a prime concern in the future of retail feed dealers. By being aware of the trends taking place, some assistance can be given to dealers. The four main trends pointed out include: (1) The development of large farm units, with the accompanying gradual disappearance of the smallest units; (2) the tendency of concentration of certain types of agricultural operations in certain areas; (3) mechanization on the farm, and (4) integration of two or more phases of production, processing and marketing.

"Regarding poultry, the change in the past 10 years has been more spectacular," said Mr. Webster. "The traditional back-yard poultry flock is well on its way to extinction. Size of laying flocks has steadily increased, while numbers of flocks have greatly declined. There is nothing foreseeable in the picture today to warrant any other conclusion than that these trends will continue in the over-all.

"It would seem likely, however, that in western areas the sideline flock, fed on concentrates and home-grown grains, might survive for an indefinite period. But in the main, the great metropolitan areas of east and west coasts will be supplied in greater degree from large laying flocks of 3,000 to 10,000 and even much larger, located near these consuming centers.

Effect on Dealers

"Every retail feed dealer is affected by all of the major trends we have listed, but in widely varying degrees. One may be in an area of almost total integrated broiler operations, another in a dairy section requiring large bulk deliveries and so on.

"Dealers in areas of considerable concentration of poultry, dairy or hog raising must enlarge and amplify their facilities for handling feed deliveries. But in areas of declining agriculture, the dealers must think of moving toward diversified lines.

"The feed manufacturer, to retain the business on a successful basis in a declining area, must encourage the development of sidelines appropriate to the particular area. Some feed manufacturers have themselves been moving quite extensively into a variety of these sidelines for the direct purpose of helping their dealers supplement their feed-line profits.

"The progressive feed manufacturer," said Mr. Webster, "will be alert to the opportunity to help his dealers reshape their programs in accordance with the changing conditions of their particular area. I must include the warning that among those retailers who fail to adjust to the changes, there will necessarily be casualties.

"In conclusion, the volume of feed tonnage passing through retailers' hands will in the aggregate inevitably be less in 1970 than today. The proportion shipped direct to the largest farms will inevitably increase. But in 1970, there will still be many successful retail operations. They will mostly have moved in one of the two directions we have indicated. The measure of their economic health will depend far more than ever before on the effectiveness of support rendered by their feed manufacturer suppliers."

Will Feed Manufacturers in 1970 Be Exclusively in the Feed Manufacturing Business? — In discussion of this topic, O. W. Joiner, vice president, Kent Feeds, Inc., Muscatine, Iowa, described two feed companies of approximately the same size which have pursued different routes in attempting to maintain profitable tonnage.

The first, which he called the Zero Feed Co., has four plants to run, and the president of the firm believes that if he can sell 200,000 tons a year he can break even. While he doesn't like it too well, he finds that his company is becoming more and more dependent on its ability to finance customers. In pursuing this course, he believes it is necessary to purchase a growing or processing operation in order to keep his feed plants running. By 1970 he is likely to have several of these integrated operations going, Mr. Joiner predicted.

On the other hand, the Ajax Feed Co., the name applied to another firm by Mr. Joiner, is headed by a man who has attempted to develop a strong sales and dealer organization capable of selling to the better, financially-sound feeders. He does some financing, but does not become as heavily involved as does the Zero company. The management of Ajax believes that there are enough of these feeders in his territory to provide opportunity for his company to serve them and continue in business.

"We prophesy in proportion to our faith," Mr. Joiner said. "I believe the Ajax company will continue to be a dominant force in 1970. Because I believe this way, this is the way I prophesy."

What Will Be the 1970 Picture in the Feed Manufacturing Business on the Matter of the Size of the Manufacturers?—I. S. Riggs, vice president of the Quaker Oats Co., Chicago, summed up his discussion of this question as follows:

1. Feed mills are going to be smaller, on the average.

2. The average size of companies also will tend to become smaller, as more firms become engaged in feed manufacturing.

3. The number of individual plants will grow, as profitable marketing areas around these plants shrink.

4. The big plants, serving areas hundreds of miles distant, will continue to disappear.

5. Some of the small firms entering the field will drop out because of management difficulties, uneconomical operations and inability to compete. Some of the large and medium may have the same trouble. And you can expect some consolidations in the interest of efficiency.

The marketing area for the larger mills is shrinking due to ever-increasing transportation costs and the specialized demands of the market for effective and fast service, he said. "If you want to be a national or regional manufacturer, you must learn to think in local terms. This leads to a larger number of plants, new organizational structure and different methods of control than we have normally been accustomed to."

Poorly Located

Mr. Riggs commented that many of the larger plants that have gone out of business were poorly located in metropolitan areas. These were built years ago to accommodate a marketing concept which concluded that their output could be sold profitably over a wide area. Increased freight rates and long hauls on ingredients and finished feeds are changing the industry's marketing concept and making plants unacceptable to customers and to those running the business because of low returns, he said.

Some medium-sized firms will expand, and other so-called large firms may fold up, he predicted. "Size alone is no measure of success, whether it be a small firm or a large firm. Either one may go broke, depending on the quality of management, and this quality becomes more critical as the size of the operation increases."

As farms become larger and more specialized, more local feed plants will be started, Mr. Riggs predicted. Many of these will be independently owned and therefore increase the number of firms, which would result in a decrease in the average size of firms.

This development could lead to another turn of the cycle, he indicated. "I don't think all of the new firms will survive in the long run. There are problems in formulation, purchasing and marketing that are not greatly understood by many. This may result in consolidations, which will increase the size of the firms but not the size of the plants. However, the consolidations may reverse the cycle and lead to larger firms.

"Now I have talked in a complete circle, which is not improbable in this business," he said.

Commenting on the growth in size of farms, Mr. Riggs referred to an Iowa State University study that indicates there is little pressure for "super" farms. "Any rapid trend toward super farms would call for greater cost economies from size than now appear to exist at the present time. Most such economies are realized within the 300-acre range."

It does not appear that super farms will take over, unless there are striking new developments in machinery design. Thus, Mr. Riggs concluded, the large company, or the reasonably large feed plant, is not going to be replaced by on-the-farm "ground up" mixed feed operations.

"It is axiomatic in this business that there will be change. Our individual size in the future is directly related to our management capacity. In other words, there is ample opportunity for growth. Our future is entirely dependent upon ourselves, our costs, and the quality of our products and services," he concluded.

Chicks Placed in Principal Broiler Areas

(000's omitted)

Week ending	Maine	Conn.	Penn.	Ind.	Ill.	Mo.	Del.	Md.
July 16	1,155	547	831	800	109	739	1,868	2,233
July 23	1,118	396	752	737	114	924	1,887	2,271
July 30	1,114	438	788	749	84	787	1,785	2,212
August 6	1,132	497	796	773	99	719	1,657	2,109
August 13	1,175	412	721	672	92	750	1,607	2,071
August 20	1,117	422	705	664	104	679	1,740	1,757
August 27	1,091	441	688	645	97	625	1,738	1,858
September 3	1,073	353	798	588	92	627	1,741	1,825
September 10	1,066	400	667	654	104	719	1,573	1,995
September 17	676	353	600	588	118	603	1,572	1,973

Week ending	Va.	W. Va.	N.C.	S.C.	Ga.	Fla.	Ala.	Miss.
July 16	1,258	625	3,237	390	7,142	212	3,856	2,511
July 23	1,208	683	3,235	305	6,776	243	3,934	2,463
July 30	1,303	508	3,077	296	6,640	198	3,659	2,191
Aug. 6	1,123	678	3,095	333	6,231	199	3,518	2,183
Aug. 13	1,095	453	3,080	351	6,195	294	3,391	2,059
August 20	1,052	457	2,954	364	5,940	283	3,298	2,112
August 27	931	407	2,850	331	5,969	288	3,176	2,032
September 3	817	413	2,838	302	5,972	245	3,232	1,994
September 10	784	420	2,693	300	5,960	206	3,000	2,022
September 17	790	363	2,717	297	6,139	185	3,115	2,009

Week ending	Ark.	La.	Texas	Wash.	Oregon	Calif.	Total 22 areas 1960	1959
July 16	4,046	443	2,179	366	283	1,066	35,896	33,881
July 23	3,801	411	2,113	354	234	974	34,933	33,455
July 30	3,642	433	2,126	309	228	985	33,552	32,044
August 6	3,714	350	2,037	302	253	1,095	32,893	31,302
August 13	3,508	343	1,876	276	218	1,054	31,693	31,136
August 20	3,478	383	1,912	318	228	886	30,853	30,402
August 27	3,321	351	1,760	327	180	964	30,070	29,236
September 3	3,104	356	1,703	298	191	961	29,523	27,913
September 10	3,035	356	1,611	233	219	1,020	29,037	26,268
September 17	3,073	334	1,583	242	192	920	28,442	24,682

GEORGIA

(Continued from page 6)

to receive at day old amounts to the day length at maturity (five months) plus five hours. The light should be decreased 15 minutes per week during the growing period. With an open house when birds begin to lay between January and July and the days getting longer, no artifical light is needed until about the first of August. Then, from this point the light should be increased 15 minutes per week until a total of 18 or 20 hours is obtained. With birds that begin production between July and January, the days are getting shorter. When the birds reach peak production, usually about two months after they begin to lay, then the light is increased 15 minutes per week until 18 or 20 hours is reached.

Optimistic Outlook

Edward Karpoff, statistician, Agricultural Marketing Service, U.S. Department of Agriculture, gave a fairly optimistic outlook for eggs the remainder of the year and for broilers the next two months. The reason for his optimism with broilers is that the supply of pork is smaller and hog prices $2 cwt. higher. He felt that the price of broilers will stay reasonably stable for the next two months but after that it would be very difficult to predict with any accuracy.

Egg prices through the remainder of 1960 should remain reasonably good, he said. By mid-December there might be some downward pressure in that the price next spring depends quite a lot on the chicks hatched this fall.

Dr. C. A. Bottorff, American Cyanamid Co., Princeton, N.J., discussed the relationship of environment to poultry health. He stated that the bird has a very poor system for regulating its temperature. One mistake that many poultrymen make is trying to heat the birds with feed rather than with fuel, he commented. Another point that Dr. Bottorff made was that "we were going to have to construct a better house, possibly with some insulation here in the south and have a reasonably well controlled ventilating system." He indicated that ridge ventilators would work only if they were fixed where one or both sides could be closed when needed.

Personnel Management

Leland Dean, personnel manager, General Time, Inc., Athens, Ga., listed nine areas of personnel management that each farm employing people should consider. They are: Employment, wage and salary administration, employee benefits, employer relations, safety, first aid, training, public relations and cafeteria. He gave the 5 F's as one way to do a good job of personnel management—"Be friendly, frank, fair, faithful, firm."

Dr. J. R. E. Taylor, veterinary research department, DeKalb Agricultural Assn., DeKalb, Ill., discussed the development and control of epidemic tremors. He stated that a vaccine that they had developed should completely eliminate any problems of epidemic tremors. He stated that it would be advisable to follow the directions in using the vaccines that come with it and work with the local poultry pathologist in obtaining the vaccine.

DRUG SALES

(Continued from page 6)

Florida, Gainesville, Fla., spoke on the relationship of the feed industry to the overall problems of radioactive fallout. "Milk," he said, "because of its ease of testing and almost universal production, has been chosen as the medium for testing for the amount of fallout. The publicity given measurements of Strontium 90 in milk leads to some alarm on the part of the uninformed and possibly to lower consumption.

"Undue alarm is unwarranted," said Dr. Davis, "since the high calcium content of milk is an excellent guarantee of protection against radioactivity. Strontium and calcium are competitive in metabolism mechanisms, the latter will supress the uptake of radioactive Strontium in humans."

If there are further widespread nuclear explosions in the world, as in the case of accident or war, Dr. Davis says the U.S. feed industry will be the country's first line of defense in providing food. Feed and grain under cover or packaged do not become radioactive as readily as open pasture.

"It is the responsibility of the feed industry," said Dr. Davis, "to alert the public to the very small amount of fallout radioactivity in milk; that the dairy industry supplies the best source of calcium to combat radioactivity, and that the feed industry is a first line of defense in supplying food in case of a nuclear emergency."

Interrelationships

Dr. Davis also discussed the growing realization of the high degree of interrelationship between minerals and trace elements and other feed ingredients, particularly protein sources. "A complete new frontier of research is opening up," he said. A full progress report is to be presented to NFIA at a later date, he commented.

In his welcoming address, William E. Noble, president, Oelwein Chemical Co., Oelwein, Iowa, remarked on the unusually heavy attendance as evidence of the expanded activity of the association. He pointed to the part NFIA took in organizing a rebuttal to Food & Drug Administration proposal earlier in the year and to the group's assistance in developing the wording of the so-called "color additive bill" this year.

SOYBEANS

(Continued from page 4)

though they fail to state specifically that it would be that minimum or the market price, whichever is the higher. They offer a somewhat lame excuse that they will not make such a determination until the end of March, 1961, when they can estimate the quantity of stocks of 1960 crop beans available for Commodity Credit Corp. loan defaults.

USDA officials say, at the same time, that they are probably going to fall somewhat short of the 140 million bushel export figure, but they anticipate for the next crop year that the export outlook will be as good or better than this year.

Up to this time, USDA has had a fixed 20¢ margin over the price support level for its stocks of beans. For some time processors have been taking beans away from the CCC farm positions of default deliveries, even when such stocks were obviously out of position for the buying processing plants.

However, at USDA there is a strong feeling that next year's bean exports will be heavy, but the price outlook domestically for beans, despite this, will be dragged or held down by the huge stocks of edible soybean oil which will be the carryout stocks for the end of this oil crop year Sept. 30, 1960.

It is now seen that the nationalistic tendencies of western Europe and other areas—as an exception for soybeans—will concentrate on whole bean imports under either dollar programs or possibly Public Law 480.

Demand Decreased

This can only mean that the oil demands from the huge government stocks of edible oils will be decreased—one official said that U.S. edible oil will be hard to sell next year.

No matter if USDA can move into the export field as much as 140 million bushels of soybeans, the oil carryover cannot be less than a drag on the bean market. It means that bean export prices and soymeal prices will have to carry an exaggerated load of the oil surplus.

If the government thinks that wheat is a difficult surplus they might take a backhand look at the oil problem.

Beginning Oct. 1, 1960, and through May 31, 1961, CCC-owned soybeans will be sold at the market price, but not less than 105% of the current (1960) county soybean support price plus carrying charges. Charges to be added include a 5¢-per-bushel receiving charge and a monthly charge of 1.65¢ bu. to cover storage (1.11¢) and interest (0.54¢).

The 1.65¢ charge, which is cumulative, will be added to the minimum price each month beginning with Oct. 1, 1960.

Support Rate Used

The county support rate for grade No. 2 soybeans at the point of storage will be used in determining the minimum price. Value of any transit billing will be added. Market discounts for quality factors will apply.

During the June through September, 1961, period, the minimum sales price for CCC-owned soybeans will be not less than 105% of the current support price. Specific pricing details will be announced prior to that time.

USDA officials pointed out that uncommitted CCC stocks of approximately 9.6 million bushels as of mid-September are much reduced from a year earlier, when at the end of September stocks approximated 41 9 million bushels.

Following is the schedule of monthly charges that will be added to 105% of the county soybean support price to determine the minimum price: October, 1960, 6.65¢ per bushel; November, 1960, 8.30¢ per bushel; December, 1960, 9.95¢ per bushel; January, 1961, 11.60¢ per bushel; February, 1961, 13.25¢ per bushel; March, 1961, 14.90¢ per bushel; April, 1961, 16.55¢ per bushel, and May, 1961, 18.20¢ per bushel.

CREDIT

(Continued from page 8)

carrying an account 30 days, assuming the price for a complete feed is $75 a ton and that the money needed to carry those accounts costs 5%, or could return 5% if used in some other way.

If a company has been showing a pre-tax profit of 6% per dollar of sales, it means that about 6.9% of your profit will be spent to carry the account for 30 days, he said. If the company has been making 10%, it means that 12.5% of the profit will be spent to carry 90-day accounts.

Discussing turkey financing, Mr. Confer asked, "Are we all sure that we're charging enough in our price lists to cover the risks involved?"

Assuming that a feed man financed $3.75 per bird and had $3,750 outstanding on a 1,000 bird flock, that flock would eat conservatively about 38 tons of feed.

"If you're financing at 6% interest and your money costs 5%, you have 1%, or $37.50, to cover all your costs," he said. "These costs would be losses, bookkeeping, credit and service expenses. Realistically, the amount doesn't cover your loss experience and the accounting department might argue that it can't do the job for 1%.

"Whether it is added in or not, the expense of losses must be covered," said Mr. Confer. "If provision is not made for it, then the margin on the feeds sold will be reduced. Examining your own loss ratios will help you to develop your own figures.

"In conclusion the company president looks upon credit as a vital tool in building and holding sales volume. As just one company president, I won't succumb to the calls of 'rare birds' who are not considered good risks."

Iowa Seed Meeting

DES MOINES, IOWA—More than 200 seedsmen from Iowa and surrounding states are expected to attend the annual convention Sept. 29-30 of the Iowa Seed Dealers Assn. at the Savery Hotel, according to Bob Skinner, secretary-treasurer.

"The Seed Industry in a Changing Agriculture" is the theme of this 58th annual convention.

Speakers will include industry leaders, U.S. Department of Agriculture officials and Iowa State University scientists.

AFMA Employee Dies

CHICAGO — Funeral services for Lorraine Roberg, a member of the AFMA staff, were held Sept. 19. Miss Roberg died Sept. 16 in Evanston Hospital, the victim of cancer. She had entered the hospital July 17. Interment was in Rosehill Cemetery.

Her survivors include three brothers and one sister.

Born in Chicago Aug. 13 1921, Miss Roberg had been secretary to W. T. Diamond, AFMA secretary, for seven years.

MARKETS

(Continued from page 2)

much lower than normal for the final week of September is likely to be on the still immature soybean fields, and therefore soybean meal and other high protein feeds. Many people in the trade take no stock in the 566 million bu. estimate made by the U.S. Department of Agriculture as of September, and they are looking for a downward revision when the October 1 estimate becomes available.

An encouraging feature in the formula feed trade this week was the price reversal, small as it was, in hogs at Chicago with a top of $17 made the middle of the current week which is the best top price in two weeks.

South Central

The leisurely pace of the formula feed trade seems to be in keeping with the news from other lines of business. Demand continues to loaf along without demonstrating any real vigor, although on the whole, it is far from bad, according to reports from mill spokesmen. Thus far, there has been little evidence of a seasonal pick up, and observers feel that the weather is still too summer-like to expect any noticeable improvement until this condition changes.

Hog and pig feeds continue to be the leaders in the sales parade. Layer feeds are also in good demand, getting a lift from the active market for good quality eggs. Dry weather has been a help to dairy feed demand. Much of the territory covered by the mills in this area is in need of a good rain.

Running time is about the same as it has been for a month or more. Most mills are operating on a strong four-day basis. Those that hold to a five-day run often use a bob-tailed crew for the fifth day.

Pacific Northwest

Oregon, Washington and Idaho formula feed movement was generally maintained and some mixers reported some improvement as fall arrived. Most mills continued to report a 5-6 day grind.

Feeding ratios continued favorable for most classes of livestock and poultry, with mills reporting continued volume movement of poultry feeds—particularly turkey and broiler mashes.

Cloudy, cool weather with scattered weekend showers had a tendency to freshen up pastures in western Washington and Oregon. Fairly good prospects for fall feed were indicated for these areas, although ranges east of the Cascade mountains appeared to be very dry.

Feed ingredient listings showed little over-all changes during the week. Trading in some principal items continued quite slow and buying interest was generally confined to immediate and prompt shipment offerings.

Soybean meal values were unchanged to $1 a ton lower, while quotes for animal protein feeds softened as meat and bone meal declined $1.50 a ton.

Oats prices were stronger, while other grains held steady.

Ohio Valley

Although formula feed sales and related manufacturing activities continued this week at about the pace of the late summer months in the Ohio Valley, a stronger tone appears to be developing, and manufacturers believe that, with the passing of the month-long summer heat wave, a business pickup is likely.

For the first time in nearly a decade there was sufficient rainfall throughout the valley this summer, resulting in anticipated record crops of corn and other fall crops. But it is expected that the effect of these bumper crops will be offset to a considerable extent by the predicted increase in pig production, despite the unsatisfactory price situation that has prevailed during recent months.

According to a U.S. Department of Agriculture report, the pig crop is now 12% below that of a year earlier and, in view of the present record consumer demand for meats of all kinds, it seems reasonable to expect a pig production pickup during the fall and winter months. Meanwhile, an improvement has been noted recently in sales of turkey feeds as valley farmers begin fattening their flocks for pre-holiday marketing.

Sales of eggs and poultry continued at a good level this week, with egg prices advancing about 2¢ doz., and both live and dressed poultry holding steady to 1¢ or more higher.

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FUNERAL SERVICES HELD

NEW ORLEANS — Funeral services were held for Martin William Lyons, 73, a retired vice president of Wesson Oil-Snowdrift Co. His death followed a brief illness. Mr. Lyons had retired in August, 1959, after 50 years of service with the company.

Information Program Set by Poultry Group

DECATUR, GA. — The Southeastern Poultry & Egg Assn.'s new management information program will be carried out by Gordon Sawyer and the newly-formed Sawyer Advertising, Harold Ford, executive secretary of SEPEA, has announced.

Gordon Sawyer

Mr. Sawyer will become a part of the Southeastern service team Oct. 1. "This will provide a great enlargement of Southeastern's services," according to J. M. Tankersley, Southeastern president. "The Southeastern board has been increasing its services in the field of management information for some time and has recognized the need for a full program in this area."

Mr. Ford explained the new management information service will include a semi-monthly newsletter to members, continuation of the management schools and expansion in this service, business outlook conferences to pinpoint industry trends, publicity and press relations and an annual Southeastern Poultry Directory.

Mr. Sawyer for the past five years has been associated with the National Broiler Council and was manager of the Southeastern division. A newspaperman before becoming associated with the poultry industry, he had served as executive secretary of the Georgia Poultry Federation and editor of the Poultry Times.

He is forming his own advertising service, Sawyer Advertising, which will be located in Gainesville.

FIRE DAMAGES MILL

BARRON, WIS. — Damage estimated at $100,000 was done to the office and feed mill of the Jerome Elevator when fire raged through the structure.

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